



#6

## SEQUENCE LISTING

## SEQUENCING LISTING

&lt;110&gt; KYOWA HAKKO KOGYO CO., LTD

&lt;111&gt; THE CELL HAVING THE POTENTIALITY OF DIFFERENTIATION INTO CARDIOMYOCYTES

&lt;130&gt; 11217W03

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&lt;151&gt; 1999-12-28

&lt;150&gt; PCT-JP00-01148

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&lt;150&gt; PCT-JP00-07741

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&lt;160&gt;80

&lt;170&gt; PatentIn Ver.2.0

&lt;210&gt; 1

&lt;211&gt; 411

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1

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Pro	Pro	Ser	Gly	Gly	Ser	Gly	Leu	Gly	Asp	Gly	Gly	Cys	Gly	
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Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ala	Pro	Arg	Arg	Glu	Pro	Val
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Phe	Pro	Ser	Gly	Ser	Ala	Gly	Pro	Gly	Pro	Arg	Gly	Pro	Arg	Ala
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Glu	Ser	Gly	Lys	Arg	Met	Asp	Cys	Pro	Ala	Leu	Pro	Pro	Gly	Trp
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Lys	Glu	Glu	Val	Ile	Arg	Lys	Ser	Gly	Leu	Ser	Ala	Gly	Lys	Ser
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Val	Tyr	Tyr	Phe	Ser	Pro	Ser	Gly	Lys	Lys	Phe	Arg	Ser	Lys	Pro
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Leu	Ala	Arg	Tyr	Leu	Gly	Asn	Thr	Val	Asp	Leu	Ser	Ser	Phe	Asp
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Gly	Leu	Ser	Ala	Ser	Asp	Val	Thr	Glu	Gln	Ile	Ile	Lys	Thr	Met
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 Ile Arg Lys Gln Glu Glu Arg Val Gln Gln Val Arg Lys Lys Leu Glu  
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 Glu Ala Leu Met Ala Asp Ile Leu Ser Arg Ala Ala Asp Thr Glu Glu  
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 Gly Glu Ser Ala Ala Gly Gly Ser Gly Ala Gly Gly Asp Ser Ala Ile  
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 Glu Gln Gly Gln Gly Ser Ala Leu Ala Pro Ser Pro Val Ser Gly  
     35                     40                             45  
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 Val Arg Arg Glu Gly Ala Arg Gly Gly Arg Gly Arg Gly Arg Trp  
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 Gly Arg  
     85                     90                             95

ccc ccg agt ggc ggc agc ggc ctt ggc ggc gac ggc ggc ggc tgc ggc			336
Pro Pro Ser Gly Gly Ser Gly Leu Gly Gly Asp Gly Gly Cys Gly			
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ggc ggc ggc agc ggt ggc ggc ggc gcc ccc cgg cgg gag cgg gtc cct			384
Gly Gly Gly Ser Gly Gly Gly Ala Pro Arg Arg Glu Pro Val Pro			
115	120	125	
ttc ccg tcg ggg agc gcg ggg ccg ggg ccc agg gga ccc cgg gcc acg			432
Phe Pro Ser Gly Ser Ala Gly Pro Gly Pro Arg Gly Pro Arg Ala Thr			
130	135	140	
gag agc ggg aag agg atg gat tgc ccg gcc ctc ccc ccc gga tgg aag			480
Glu Ser Gly Lys Arg Met Asp Cys Pro Ala Leu Pro Pro Gly Trp Lys			
145	150	155	160
aag gag gaa gtg atc cga aaa tct ggg cta agt gct ggc aag agc gat			528
Lys Glu Glu Val Ile Arg Lys Ser Gly Leu Ser Ala Gly Lys Ser Asp			
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Val Tyr Tyr Phe Ser Pro Ser Gly Lys Lys Phe Arg Ser Lys Pro Gln			
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Leu Ala Arg Tyr Leu Gly Asn Thr Val Asp Leu Ser Ser Phe Asp Phe			
195	200	205	
aga act gga aag atg atg cct agt aaa tta cag aag aac aaa cag aga			672
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225	230	235	240
aca aca ttg cca att aga caa aca gca tca att ttc aaa caa ccg gta			768
Thr Thr Leu Pro Ile Arg Gln Thr Ala Ser Ile Phe Lys Gln Pro Val			
245	250	255	
acc aaa gtc aca aat cat cct agt aat aaa gtg aaa tca gac cca caa			816
Thr Lys Val Thr Asn His Pro Ser Asn Lys Val Lys Ser Asp Pro Gln			
260	265	270	
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Arg Met Asn Glu Gln Pro Arg Gln Leu Phe Trp Glu Lys Arg Leu Gln			
275	280	285	

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Gly Leu Ser Ala Ser Asp Val Thr Glu Gln Ile Lys Thr Met Glu				
290	295	300		
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ctt tta tct gct gtt gcc agt gct ttg cac aca agc tct gcg cca atc				1008
Leu Leu Ser Ala Val Ala Ser Ala Leu His Thr Ser Ser Ala Pro Ile				
325	330	335		
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Thr Gly Gln Val Ser Ala Ala Val Glu Lys Asn Pro Ala Val Trp Leu				
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Asn Thr Ser Gln Pro Leu Cys Lys Ala Phe Ile Val Thr Asp Glu Asp				
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370	375	380		
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Glu Ala Leu Met Ala Asp Ile Leu Ser Arg Ala Ala Asp Thr Glu Glu				
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Glu Ile Asp Ser Val Gly Ser Glu Asp Ser Leu Asp Thr Ser Leu Arg				

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Pro Ile Arg Arg Lys Arg Ser Ile Glu Glu Ala Val Pro Ala Val Cys			
85	90	95	
Lys Thr Arg Thr Val Ile Tyr Glu Ile Pro Arg Ser Gln Val Asp Pro			
100	105	110	
Thr Ser Ala Asn Phe Leu Ile Trp Pro Pro Cys Val Glu Val Lys Arg			
115	120	125	
Cys Thr Gly Cys Cys Asn Thr Ser Ser Val Lys Cys Gln Pro Ser Arg			
130	135	140	
Val His His Arg Ser Val Lys Val Ala Lys Val Glu Tyr Val Arg Lys			
145	150	155	160
Lys Pro Lys Leu Lys Glu Val Gln Val Arg Leu Glu Glu His Leu Glu			
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His Val Leu Ala Glu Glu Ala Glu Ile Pro Arg Glu Val Ile Glu Arg			
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Glu Ile Asp Ser Val Gly Ser Glu Asp Ser Leu Asp Thr Ser Leu Arg			
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gct cac ggg gtc cac gcc act aag cat gtg ccc gag aag cgg ccc ctg			240
Ala His Gly Val His Ala Thr Lys His Val Pro Glu Lys Arg Pro Leu			
65	70	75	80
ccc att cgg agg aag aga agc atc gag gaa gct gtc ccc gct gtc tgc			288
Pro Ile Arg Arg Lys Arg Ser Ile Glu Glu Ala Val Pro Ala Val Cys			
85	90	95	
aag acc agg acg gtc att tac gag att cct cgg agt cag gtc gac ccc			336
Lys Thr Arg Thr Val Ile Tyr Glu Ile Pro Arg Ser Gln Val Asp Pro			
100	105	110	
acg tcc gcc aac ttc ctg atc tgg ccc ccg tgc gtg gag gtg aaa cgc			384
Thr Ser Ala Asn Phe Leu Ile Trp Pro Pro Cys Val Glu Val Lys Arg			
115	120	125	
tgc acc ggc tgc tgc aac acg agc agt gtc aag tgc cag ccc tcc cgc			432
Cys Thr Gly Cys Cys Asn Thr Ser Ser Val Lys Cys Gln Pro Ser Arg			
130	135	140	
gtc cac cac cgc agc gtc aag gtg gcc aag gtg gaa tac gtc agg aag			480
Val His His Arg Ser Val Lys Val Ala Lys Val Glu Tyr Val Arg Lys			
145	150	155	160
aag cca aaa tta aaa gaa gtc cag gtg agg tta gag gag cat ttg gag			528
Lys Pro Lys Leu Lys Glu Val Gln Val Arg Leu Glu Glu His Leu Glu			
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His	Gly	Asp	Pro	Gly	Glu	Glu	Asp	Gly	Ala	Glu	Leu	Asp	Leu	Asn	Met	
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Arg	Ser	Leu	Gly	Ser	Leu	Thr	Ile	Ala	Glu	Pro	Ala	Met	Ile	Ala	Glu	
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Cys	Lys	Thr	Arg	Thr	Glu	Val	Phe	Glu	Ile	Ser	Arg	Arg	Leu	Ile	Asp	
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Arg	Thr	Asn	Ala	Asn	Phe	Leu	Val	Trp	Pro	Pro	Cys	Val	Glu	Val	Gln	
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Gln	Val	Gln	Leu	Arg	Pro	Val	Gln	Val	Arg	Lys	Ile	Glu	Ile	Val	Arg	
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Lys	Lys	Pro	Ile	Phe	Lys	Lys	Ala	Thr	Val	Thr	Leu	Glu	Asp	His	Leu	
									165		170			175		
Ala	Cys	Lys	Cys	Glu	Thr	Val	Ala	Ala	Ala	Arg	Pro	Val	Thr	Arg	Ser	
									180		185			190		
Pro	Gly	Gly	Ser	Gln	Glu	Gln	Arg	Ala	Lys	Thr	Pro	Gln	Thr	Arg	Val	
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ctg agt gac cac tcg atc cgc tcc ttt gat gat ctc caa cgc ctg ctg	144
Leu Ser Asp His Ser Ile Arg Ser Phe Asp Asp Leu Gln Arg Leu Leu	
35 40 45	
cac gga gac ccc gga gag gaa gat ggg gcc gag ttg gac ctg aac atg	192
His Gly Asp Pro Gly Glu Asp Gly Ala Glu Leu Asp Leu Asn Met	
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acc cgc tcc cac tct gga ggc gag ctg gag agc ttg gct cgt gga aga	240
Thr Arg Ser His Ser Gly Gly Glu Leu Glu Ser Leu Ala Arg Gly Arg	
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Arg Ser Leu Gly Ser Leu Thr Ile Ala Glu Pro Ala Met Ile Ala Glu	
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Cys Lys Thr Arg Thr Glu Val Phe Glu Ile Ser Arg Arg Leu Ile Asp	
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Arg Thr Asn Ala Asn Phe Leu Val Trp Pro Pro Cys Val Glu Val Gln	
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Arg Cys Ser Gly Cys Cys Asn Asn Arg Asn Val Gln Cys Arg Pro Thr	
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Gln Val Gln Leu Arg Pro Val Gln Val Arg Lys Ile Glu Ile Val Arg	
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aag aag cca atc ttt aag aag gcc acg gtg acg ctg gaa gac cac ctg	528
Lys Lys Pro Ile Phe Lys Lys Ala Thr Val Thr Leu Glu Asp His Leu	
165 170 175	
gca tgc aag tgt gag aca gtg gca gct gca cgg cct gtg acc cga agc	576

Ala Cys Lys Cys Glu Thr Val Ala Ala Ala Arg Pro Val Thr Arg Ser				
180	185	190		
ccg ggg ggt tcc cag gag cag cga gcc aaa acg ccc caa act cgg gtg				624
Pro Gly Gly Ser Gln Glu Gln Arg Ala Lys Thr Pro Gln Thr Arg Val				
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acc att cgg acg gtg cga gtc cgc cgg ccc ccc aag ggc aag cac cgg				672
Thr Ile Arg Thr Val Arg Val Arg Arg Pro Pro Lys Gly Lys His Arg				
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Arg Tyr Leu Ala Met Lys Glu Asp Gly Arg Leu Leu Ala Ser Lys Cys				
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 Gly Ser Gly Ala Phe Pro Pro Gly His Phe Lys Asp Pro Lys Arg Leu  
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 tac tgc aaa aac ggg ggc ttc ttc ctg cgc atc cac ccc gac ggc cga 144  
 Tyr Cys Lys Asn Gly Gly Phe Phe Leu Arg Ile His Pro Asp Gly Arg  
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 gtt gac ggg gtc cg<sup>g</sup> gag aag agc gac cct cac atc aag cta caa ctt 192  
 Val Asp Gly Val Arg Glu Lys Ser Asp Pro His Ile Lys Leu Gln Leu  
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 caa gca gaa gag aga gga gtt gtg tct atc aaa gga gtg tgt gct aac 240  
 Gln Ala Glu Glu Arg Gly Val Val Ser Ile Lys Gly Val Cys Ala Asn  
 65 70 75 80  
 cgt tac ctg gct atg aag gaa gat gga aga tta ctg gct tct aaa tgt 288  
 Arg Tyr Leu Ala Met Lys Glu Asp Gly Arg Leu Leu Ala Ser Lys Cys  
 85 90 95  
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 Val Thr Asp Glu Cys Phe Phe Glu Arg Leu Glu Ser Asn Asn Tyr  
 100 105 110  
 aat act tac cgg tca agg aaa tac acc agt tgg tat gtg gca ttg aaa 384  
 Asn Thr Tyr Arg Ser Arg Lys Tyr Thr Ser Trp Tyr Val Ala Leu Lys  
 115 120 125  
 cga act ggg cag tat aaa ctt gga tcc aaa aca gga cct ggg cag aaa 432  
 Arg Thr Gly Gln Tyr Lys Leu Gly Ser Lys Thr Gly Pro Gly Gln Lys

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Ala Ala Phe Lys Pro Glu Ala Tyr Ala Gly Pro Glu Ala Ala Ala Pro			
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Gly Leu Pro Glu Leu Arg Ala Glu Leu Gly Arg Ala Pro Ser Pro Ala			
65	70	75	80
Lys Cys Ala Ser Ala Phe Pro Ala Ala Pro Ala Phe Tyr Pro Arg Ala			
85	90	95	
Tyr Ser Asp Pro Asp Pro Ala Lys Asp Pro Arg Ala Glu Lys Lys Glu			
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Leu Cys Ala Leu Gln Lys Ala Val Glu Leu Glu Lys Thr Glu Ala Asp			
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Asn Ala Glu Arg Pro Arg Ala Arg Arg Arg Lys Pro Arg Val Leu			
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Phe Ser Gln Ala Gln Val Tyr Glu Leu Glu Arg Arg Phe Lys Gln Gln			
145	150	155	160
Arg Tyr Leu Ser Ala Pro Glu Arg Asp Gln Leu Ala Ser Val Leu Lys			
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Leu Thr Ser Thr Gln Val Lys Ile Trp Phe Gln Asn Arg Arg Tyr Lys			
180	185	190	
Cys Lys Arg Gln Arg Gln Asp Gln Thr Leu Glu Leu Val Gly Leu Pro			
195	200	205	
Pro Pro Pro Pro Pro Ala Arg Arg Ile Ala Val Pro Val Leu Val			

210	215	220
Arg Asp Gly Lys Pro Cys Leu Gly Asp Ser Ala Pro Tyr Ala Pro Ala		
225	230	235
Tyr Gly Val Gly Leu Asn Pro Tyr Gly Tyr Asn Ala Tyr Pro Ala Tyr		
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Pro Gly Tyr Gly Gly Ala Ala Cys Ser Pro Gly Tyr Ser Cys Thr Ala		
260	265	270
Ala Tyr Pro Ala Gly Pro Ser Pro Ala Gln Pro Ala Thr Ala Ala Ala		
275	280	285
Asn Asn Asn Phe Val Asn Phe Gly Val Gly Asp Leu Asn Ala Val Gln		
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atc cta aac ctg gaa cag cag cag cgc agc ctg gct gcc gcc gga gag	96		
Ile Leu Asn Leu Glu Gln Gln Arg Ser Leu Ala Ala Gly Glu			
20	25	30	
ctc tct gcc cgc ctg gag gcg acc ctg gcg ccc tcc tcc tgc atg ctg	144		
Leu Ser Ala Arg Leu Glu Ala Thr Leu Ala Pro Ser Ser Cys Met Leu			
35	40	45	
gcc gcc ttc aag cca gag gcc tac gct ggg ccc gag gcg gct gcg ccg	192		
Ala Ala Phe Lys Pro Glu Ala Tyr Ala Gly Pro Glu Ala Ala Ala Pro			
50	55	60	
ggc ctc cca gag ctg cgc gca gag ctg ggc cgc gcg cct tca ccg gcc	240		

Gly Leu Pro Glu Leu Arg Ala Glu Leu Gly Arg Ala Pro Ser Pro Ala			
65	70	75	80
aag tgt gct tct gcc ttt ccc gcc ccc gcc ttc tat cca cgt gcc			288
Lys Cys Ala Ser Ala Phe Pro Ala Ala Pro Ala Phe Tyr Pro Arg Ala			
85	90	95	
tac agc gac ccc gac cca gcc aag gac cct aga gcc gaa aag aaa gag			336
Tyr Ser Asp Pro Asp Pro Ala Lys Asp Pro Arg Ala Glu Lys Lys Glu			
100	105	110	
ctg tgc gcg ctg cag aag gcg gtg gag ctg gag aag aca gag gcg gac			384
Leu Cys Ala Leu Gln Lys Ala Val Glu Leu Glu Lys Thr Glu Ala Asp			
115	120	125	
aac gcg gag cgg ccc cgg gcg cga cgg cgg agg aag ccg cgc gtg ctc			432
Asn Ala Glu Arg Pro Arg Ala Arg Arg Arg Lys Pro Arg Val Leu			
130	135	140	
ttc tcg cag gcg cag gtc tat gag ctg gag cgg cgc ttc aag cag cag			480
Phe Ser Gln Ala Gln Val Tyr Glu Leu Glu Arg Arg Phe Lys Gln Gln			
145	150	155	160
cgg tac ctg tcg gcc ccc gaa cgc gac cag ctg gcc agc gtg ctg aaa			528
Arg Tyr Leu Ser Ala Pro Glu Arg Asp Gln Leu Ala Ser Val Leu Lys			
165	170	175	
ctc acg tcc acg cag gtc aag atc tgg ttc cag aac cgg cgc tac aag			576
Leu Thr Ser Thr Gln Val Lys Ile Trp Phe Gln Asn Arg Arg Tyr Lys			
180	185	190	
tgc aag cgg cag cgg cag gac act ctg gag ctg gtg ggg ctg ccc			624
Cys Lys Arg Gln Arg Gln Asp Gln Thr Leu Glu Leu Val Gly Leu Pro			
195	200	205	
ccg ccg ccg ccg cct gcc cgc agg atc gcg gtg cca gtg ctg gtg			672
Pro Pro Pro Pro Pro Ala Arg Arg Ile Ala Val Pro Val Leu Val			
210	215	220	
cgc gat ggc aag cca tgc cta ggg gac tcg gcg ccc tac gcg cct gcc			720
Arg Asp Gly Lys Pro Cys Leu Gly Asp Ser Ala Pro Tyr Ala Pro Ala			
225	230	235	240
tac ggc gtg ggc ctc aat ccc tac ggt tat aac gcc tac ccc gcc tat			768
Tyr Gly Val Gly Leu Asn Pro Tyr Gly Tyr Asn Ala Tyr Pro Ala Tyr			
245	250	255	
ccg ggt tac ggc ggc gcg gcc tgc agc cct ggc tac agc tgc act gcc			816

Pro Gly Tyr Gly Gly Ala Ala Cys Ser Pro Gly Tyr Ser Cys Thr Ala  
                  260                 265                 270  
 gct tac ccc gcc ggg cct tcc cca gcg cag ccg gcc act gcc gcc gcc   864  
 Ala Tyr Pro Ala Gly Pro Ser Pro Ala Gln Pro Ala Thr Ala Ala Ala  
                  275                 280                 285  
 aac aac aac ttc gtg aac ttc ggc gtc ggg gac ttg aat gcg gtt cag   912  
 Asn Asn Asn Phe Val Asn Phe Gly Val Gly Asp Leu Asn Ala Val Gln  
                  290                 295                 300  
 agc ccc ggg att ccg cag agc aac tcg gga gtg tcc acg ctg cat ggt   960  
 Ser Pro Gly Ile Pro Gln Ser Asn Ser Gly Val Ser Thr Leu His Gly  
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 Ile Arg Ala Trp  
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 Ala Ser Ser Pro Val Tyr Leu Pro Thr Pro Arg Val Pro Ser Ser Val  
     35                 40                 45  
 Leu Gly Leu Ser Tyr Leu Gln Gly Gly Gly Ala Gly Ser Ala Ser Gly  
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 Gly Pro Ser Gly Gly Ser Pro Gly Gly Ala Ala Ser Gly Ala Gly Pro  
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 Gly Thr Gln Gln Gly Ser Pro Gly Trp Ser Gln Ala Gly Ala Thr Gly  
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 Ala Ala Tyr Thr Pro Pro Val Ser Pro Arg Phe Ser Phe Pro Gly  
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 Thr Thr Gly Ser Leu Ala Ala Ala Ala Ala Ala Ala Arg Glu  
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 Ala Ala Ala Tyr Ser Ser Gly Gly Ala Ala Gly Ala Gly Leu Ala

130	135	140
Gly Arg Glu Gln Tyr	Gly Arg Ala Gly Phe	Ala Gly Ser Tyr Ser Ser
145	150	155
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165	170	175
180	185	190
Ala Ala Ala Ser Ala Gly Pro Phe Asp Ser Pro Val Leu His Ser Leu		
195	200	205
Asp Asp Phe Ser Glu Gly Arg Glu Cys Val Asn Cys Gly Ala Met Ser		
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Thr Pro Leu Trp Arg Arg Asp Gly Thr Gly His Tyr Leu Cys Asn Ala		
225	230	235
240		
Cys Gly Leu Tyr His Lys Met Asn Gly Ile Asn Arg Pro Leu Ile Lys		
245	250	255
Pro Gln Arg Arg Leu Ser Ala Ser Arg Arg Val Gly Leu Ser Cys Ala		
260	265	270
Asn Cys Gln Thr Thr Thr Leu Trp Arg Arg Asn Ala Glu Gly		
275	280	285
Glu Pro Val Cys Asn Ala Cys Gly Leu Tyr Met Lys Leu His Gly Val		
290	295	300
Pro Arg Pro Leu Ala Met Arg Lys Glu Gly Ile Gln Thr Arg Lys Arg		
305	310	315
320		
Lys Pro Lys Asn Leu Asn Lys Ser Lys Thr Pro Ala Ala Pro Ser Gly		
325	330	335
Ser Glu Ser Leu Pro Pro Ala Ser Gly Ala Ser Ser Asn Ser Ser Asn		
340	345	350
Ala Thr Thr Ser Ser Ser Glu Glu Met Arg Pro Ile Lys Thr Glu Pro		
355	360	365
Gly Leu Ser Ser His Tyr Gly His Ser Ser Ser Val Ser Gln Thr Phe		
370	375	380
Ser Val Ser Ala Met Ser Gly His Gly Pro Ser Ile His Pro Val Leu		
385	390	395
400		
Ser Ala Leu Lys Leu Ser Pro Gln Gly Tyr Ala Ser Pro Val Ser Gln		
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Ser Pro Gln Thr Ser Ser Lys Gln Asp Ser Trp Asn Ser Leu Val Leu		

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15		
gcc tac cag gcg ggc ggc ccc ggc ccc ttc atg cac ggc gcg ggc gcc 96		
Ala Tyr Gln Ala Gly Gly Pro Gly Pro Phe Met His Gly Ala Gly Ala		
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gca tcc tcg cca gtc tac ctg ccc aca ccg cgg gtg ccc tcc tcc gtt 144		
Ala Ser Ser Pro Val Tyr Leu Pro Thr Pro Arg Val Pro Ser Ser Val		
35	40	45
ctg ggc ctg tcc tac ctc cag ggc gga ggc gcg ggc tct gcg tcc gga 192		
Leu Gly Leu Ser Tyr Leu Gln Gly Gly Ala Gly Ser Ala Ser Gly		
50	55	60
ggc ccc tcg ggc ggc agc ccc ggt ggg gcc gcg tct ggt gcg ggg ccc 240		
Gly Pro Ser Gly Gly Ser Pro Gly Gly Ala Ala Ser Gly Ala Gly Pro		
65	70	75
80		
ggg acc cag cag ggc agc ccg gga tgg agc cag gcg gga gcg acc gga 288		
Gly Thr Gln Gln Gly Ser Pro Gly Trp Ser Gln Ala Gly Ala Thr Gly		
85	90	95
gcc gct tac acc ccg ccg gtg tcg ccg cgc ttc tcc ttc ccg ggg 336		
Ala Ala Tyr Thr Pro Pro Val Ser Pro Arg Phe Ser Phe Pro Gly		
100	105	110
acc acc ggg tcc ctg gcg gcg gcg gct gcc gcc cgg gaa 384		
Thr Thr Gly Ser Leu Ala Ala Ala Ala Ala Ala Ala Arg Glu		
115	120	125
gct gcg gcc tac agc agt ggc ggc gga gcg gcg ggt gcg ggc ctg gcg 432		

Ala Ala Ala Tyr Ser Ser Gly Gly Gly Ala Ala Gly Ala Gly Leu Ala			
130	135	140	
ggc cgc gag cag tac ggg cgc gcc ttc gcg ggc tcc tac tcc agc			480
Gly Arg Glu Gln Tyr Gly Arg Ala Gly Phe Ala Gly Ser Tyr Ser Ser			
145	150	155	160
ccc tac ccg gct tac atg gcc gac gtg ggc gcg tcc tgg gcc gca gcc			528
Pro Tyr Pro Ala Tyr Met Ala Asp Val Gly Ala Ser Trp Ala Ala Ala			
165	170	175	
gcc gcc gcc tcc gcc ggc ccc ttc gac agc ccg gtc ctg cac agc ctg			576
Ala Ala Ala Ser Ala Gly Pro Phe Asp Ser Pro Val Leu His Ser Leu			
180	185	190	
ccc ggc cgg gcc aac ccg gcc cga cac ccc aat ctc gat atg ttt			624
Pro Gly Arg Ala Asn Pro Ala Ala Arg His Pro Asn Leu Asp Met Phe			
195	200	205	
gac gac ttc tca gaa ggc aga gag tgt gtc aac tgt ggg gct atg tcc			672
Asp Asp Phe Ser Glu Gly Arg Glu Cys Val Asn Cys Gly Ala Met Ser			
210	215	220	
acc ccg ctc tgg agg cga gat ggg acg ggt cac tat ctg tgc aac gcc			720
Thr Pro Leu Trp Arg Arg Asp Gly Thr Gly His Tyr Leu Cys Asn Ala			
225	230	235	240
tgt ggc ctc tac cac aag atg aac ggc atc aac cgg ccg ctc atc aag			768
Cys Gly Leu Tyr His Lys Met Asn Gly Ile Asn Arg Pro Leu Ile Lys			
245	250	255	
cct cag cgc cgg ctg tcc gcc tcc cgc cga gtg ggc ctc tcc tgt gcc			816
Pro Gln Arg Arg Leu Ser Ala Ser Arg Arg Val Gly Leu Ser Cys Ala			
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Asn Cys Gln Thr Thr Thr Leu Trp Arg Arg Asn Ala Glu Gly			
275	280	285	
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Glu Pro Val Cys Asn Ala Cys Gly Leu Tyr Met Lys Leu His Gly Val			
290	295	300	
ccc agg cct ctt gca atg cgg aaa gag ggg atc caa acc aga aaa cgg			960
Pro Arg Pro Leu Ala Met Arg Lys Glu Gly Ile Gln Thr Arg Lys Arg			
305	310	315	320
aag ccc aag aac ctg aat aaa tct aag aca cca gca gct cct tca ggc			1008

Lys	Pro	Lys	Asn	Leu	Asn	Lys	Ser	Thr	Pro	Ala	Ala	Pro	Ser	Gly		
325															335	
agt	gag	agc	ctt	cct	ccc	gcc	agc	ggt	gtc	tcc	agc	aac	tcc	agc	aac	1056
Ser	Glu	Ser	Leu	Pro	Pro	Ala	Ser	Gly	Ala	Ser	Ser	Asn	Ser	Ser	Asn	
340															350	
gcc	acc	acc	agc	agc	gag	gag	atg	cgt	ccc	atc	aag	acg	gag	cct		1104
Ala	Thr	Thr	Ser	Ser	Glu	Glu	Met	Arg	Pro	Ile	Lys	Thr	Glu	Pro		
355															365	
ggc	ctg	tca	tct	cac	tac	ggg	cac	agc	agc	tcc	gtg	tcc	cag	acg	ttc	1152
Gly	Leu	Ser	Ser	His	Tyr	Gly	His	Ser	Ser	Ser	Val	Ser	Gln	Thr	Phe	
370															380	
tca	gtc	agt	gcf	atg	tct	ggc	cat	ggg	ccc	tcc	atc	cac	cct	gtc	ctc	1200
Ser	Val	Ser	Ala	Met	Ser	Gly	His	Gly	Pro	Ser	Ile	His	Pro	Val	Leu	
385															400	
tcg	gcc	ctg	aag	ctc	tcc	cca	caa	ggc	tat	gcf	tct	ccc	gtc	agc	cag	1248
Ser	Ala	Leu	Lys	Leu	Ser	Pro	Gln	Gly	Tyr	Ala	Ser	Pro	Val	Ser	Gln	
405															415	
tct	cca	cag	acc	agc	tcc	aag	cag	gac	tct	tgg	aac	agt	ctg	gtc	ttg	1296
Ser	Pro	Gln	Thr	Ser	Ser	Lys	Gln	Asp	Ser	Trp	Asn	Ser	Leu	Val	Leu	
420															430	
gcc	gac	agt	cac	ggg	gac	ata	atc	act	gcf							1326
Ala	Asp	Ser	His	Gly	Asp	Ile	Ile	Thr	Ala							
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Tyr	Glu	Leu	Ser	Val	Leu	Cys	Asp	Cys	Glu	Ile	Ala	Leu	Ile	Ile	Phe	
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Val Leu Leu Lys Tyr Thr Glu Tyr Asn Glu Pro His Glu Ser Arg Thr  
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 Asn Ser Asp Ile Val Glu Ala Leu Asn Lys Lys Glu His Arg Gly Cys  
 85 90 95  
 Asp Ser Pro Asp Pro Asp Thr Ser Tyr Val Leu Thr Pro His Thr Glu  
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 115 120 125  
 His Lys Ile Ala Pro Gly Leu Pro Pro Gln Asn Phe Ser Met Ser Val  
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 Thr Val Pro Val Thr Ser Pro Asn Ala Leu Ser Tyr Thr Asn Pro Gly  
 145 150 155 160  
 Ser Ser Leu Val Ser Pro Ser Leu Ala Ala Ser Ser Thr Leu Thr Asp  
 165 170 175  
 Ser Ser Met Leu Ser Pro Pro Gln Thr Thr Leu His Arg Asn Val Ser  
 180 185 190  
 Pro Gly Ala Pro Gln Arg Pro Pro Ser Thr Gly Asn Ala Gly Gly Met  
 195 200 205  
 Leu Ser Thr Thr Asp Leu Thr Val Pro Asn Gly Ala Gly Ser Ser Pro  
 210 215 220  
 Val Gly Asn Gly Phe Val Asn Ser Arg Ala Ser Pro Asn Leu Ile Gly  
 225 230 235 240  
 Ala Thr Gly Ala Asn Ser Leu Gly Lys Val Met Pro Thr Lys Ser Pro  
 245 250 255  
 Pro Pro Pro Gly Gly Asn Leu Gly Met Asn Ser Arg Lys Pro Asp  
 260 265 270  
 Leu Arg Val Val Ile Pro Pro Ser Ser Lys Gly Met Met Pro Pro Leu  
 275 280 285  
 Ser Glu Glu Glu Leu Glu Leu Asn Thr Gln Arg Ile Ser Ser Ser  
 290 295 300  
 Gln Ala Thr Gln Pro Leu Ala Thr Pro Val Val Ser Val Thr Thr Pro  
 305 310 315 320  
 Ser Leu Pro Pro Gln Gly Leu Val Tyr Ser Ala Met Pro Thr Ala Tyr  
 325 330 335  
 Asn Thr Asp Tyr Ser Leu Thr Ser Ala Asp Leu Ser Ala Leu Gln Gly  
 340 345 350

Phe Asn Ser Pro Gly Met Leu Ser Leu Gly Gln Val Ser Ala Trp Gln  
                  355                 360                 365  
 Gln His His Leu Gly Gln Ala Ala Leu Ser Ser Leu Val Ala Gly Gly  
                  370                 375                 380  
 Gln Leu Ser Gln Gly Ser Asn Leu Ser Ile Asn Thr Asn Gln Asn Ile  
                  385                 390                 395                 400  
 Ser Ile Lys Ser Glu Pro Ile Ser Pro Pro Arg Asp Arg Met Thr Pro  
                  405                 410                 415  
 Ser Gly Phe Gln Pro Pro  
                  420                 425                 430  
 Pro Pro Pro Gln Pro Gln Pro Gln Pro Pro Gln Pro Gln Pro Arg Gln  
                  435                 440                 445  
 Glu Met Gly Arg Ser Pro Val Asp Ser Leu Ser Ser Ser Ser Ser  
                  450                 455                 460  
 Tyr Asp Gly Ser Asp Arg Glu Asp Pro Arg Gly Asp Phe His Ser Pro  
                  465                 470                 475                 480  
 Ile Val Leu Gly Arg Pro Pro Asn Thr Glu Asp Arg Glu Ser Pro Ser  
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     1             5                 10                 15  
 cga cag gtc act ttt aca aag aga aag ttt gga tta atg aag aaa gcc      96  
 Arg Gln Val Thr Phe Thr Lys Arg Lys Phe Gly Leu Met Lys Lys Ala  
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 tat gaa ctt agt gtg ctc tgt gac tgt gaa ata gca ctc atc att ttc      144  
 Tyr Glu Leu Ser Val Leu Cys Asp Cys Glu Ile Ala Leu Ile Ile Phe

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aac agc tct aac aaa ctg ttt caa tat gct agc act gat atg gac aaa Asn Ser Ser Asn Lys Leu Phe Gln Tyr Ala Ser Thr Asp Met Asp Lys			192
50	55	60	
gtt ctt ctc aag tat aca gaa tat aat gaa cct cat gaa agc aga acc Val Leu Leu Lys Tyr Thr Glu Tyr Asn Glu Pro His Glu Ser Arg Thr			240
65	70	75	80
aac tcg gat att gtt gag gct ctg aac aag aag gaa cac aga ggg tgc Asn Ser Asp Ile Val Glu Ala Leu Asn Lys Lys Glu His Arg Gly Cys			288
85	90	95	
gac agc cca gac cct gat act tca tat gtg cta act cca cat aca gaa Asp Ser Pro Asp Pro Asp Thr Ser Tyr Val Leu Thr Pro His Thr Glu			336
100	105	110	
gaa aaa tat aaa aaa att aat gag gaa ttt gat aat atg atg cgg aat Glu Lys Tyr Lys Lys Ile Asn Glu Glu Phe Asp Asn Met Met Arg Asn			384
115	120	125	
cat aaa atc gca cct ggt ctg cca cct cag aac ttt tca atg tct gtc His Lys Ile Ala Pro Gly Leu Pro Pro Gln Asn Phe Ser Met Ser Val			432
130	135	140	
aca gtt cca gtg acc agc ccc aat gct ttg tcc tac act aac cca ggg Thr Val Pro Val Thr Ser Pro Asn Ala Leu Ser Tyr Thr Asn Pro Gly			480
145	150	155	160
agt tca ctg gtg tcc cca tct ttg gca gcc agc tca acg tta aca gat Ser Ser Leu Val Ser Pro Ser Leu Ala Ala Ser Ser Thr Leu Thr Asp			528
165	170	175	
tca agc atg ctc tct cca cct caa acc aca tta cat aga aat gtg tct Ser Ser Met Leu Ser Pro Pro Gln Thr Thr Leu His Arg Asn Val Ser			576
180	185	190	
cct gga gct cct cag aga cca cca agt act ggc aat gca ggt ggg atg Pro Gly Ala Pro Gln Arg Pro Pro Ser Thr Gly Asn Ala Gly Gly Met			624
195	200	205	
ttg agc act aca gac ctc aca gtg cca aat gga gct gga agc agt cca Leu Ser Thr Thr Asp Leu Thr Val Pro Asn Gly Ala Gly Ser Ser Pro			672
210	215	220	
gtg ggg aat gga ttt gta aac tca aga gct tct cca aat ttg att gga Val Gly Asn Gly Phe Val Asn Ser Arg Ala Ser Pro Asn Leu Ile Gly			720

225	230	235	240	
gct act ggt gca aat agc tta ggc aaa gtc atg cct aca aag tct ccc				768
Ala Thr Gly Ala Asn Ser Leu Gly Lys Val Met Pro Thr Lys Ser Pro				
245	250	255		
cct cca cca ggt ggt aat ctt gga atg aac agt agg aaa cca gat				816
Pro Pro Pro Gly Gly Asn Leu Gly Met Asn Ser Arg Lys Pro Asp				
260	265	270		
ctt cga gtt gtc atc ccc cct tca agc aag ggc atg atg cct cca cta				864
Leu Arg Val Val Ile Pro Pro Ser Ser Lys Gly Met Met Pro Pro Leu				
275	280	285		
tcg gag gaa gag gaa ttg gag ttg aac acc caa agg atc agt agt tct				912
Ser Glu Glu Glu Leu Glu Leu Asn Thr Gln Arg Ile Ser Ser Ser				
290	295	300		
caa gcc act caa cct ctt gct acc cca gtc gtg tct gtg aca acc cca				960
Gln Ala Thr Gln Pro Leu Ala Thr Pro Val Val Ser Val Thr Thr Pro				
305	310	315	320	
agc ttg cct ccg caa gga ctt gtg tac tca gca atg ccg act gcc tac				1008
Ser Leu Pro Pro Gln Gly Leu Val Tyr Ser Ala Met Pro Thr Ala Tyr				
325	330	335		
aac act gat tat tca ctg acc agc gct gac ctg tca gcc ctt caa ggc				1056
Asn Thr Asp Tyr Ser Leu Thr Ser Ala Asp Leu Ser Ala Leu Gln Gly				
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Phe Asn Ser Pro Gly Met Leu Ser Leu Gly Gln Val Ser Ala Trp Gln				
355	360	365		
cag cac cac cta gga caa gca gcc ctc agc tct ctt gtt gct gga ggg				1152
Gln His His Leu Gly Gln Ala Ala Leu Ser Ser Leu Val Ala Gly Gly				
370	375	380		
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Gln Leu Ser Gln Gly Ser Asn Leu Ser Ile Asn Thr Asn Gln Asn Ile				
385	390	395	400	
agc atc aag tcc gaa ccg att tca cct cct cggt gat cgt atg acc cca				1248
Ser Ile Lys Ser Glu Pro Ile Ser Pro Pro Arg Asp Arg Met Thr Pro				
405	410	415		
tcg ggc ttc cag cag cag cag cag cag cag cag cag ccg ccg				1296
Ser Gly Phe Gln Pro Pro				

420	425	430	
cca cca ccg cag ccc cag cca caa ccc ccg cag ccc cag ccc cga cag			1344
Pro Pro Pro Gln Pro Gln Pro Gln Pro Pro Gln Pro Gln Pro Arg Gln			
435	440	445	
gaa atg ggg cgc tcc cct gtg gac agt ctg agc agc tct agt agc tcc			1392
Glu Met Gly Arg Ser Pro Val Asp Ser Leu Ser Ser Ser Ser Ser			
450	455	460	
tat gat ggc agt gat cgg gag gat cca cgg ggc gac ttc cat tct cca			1440
Tyr Asp Gly Ser Asp Arg Glu Asp Pro Arg Gly Asp Phe His Ser Pro			
465	470	475	480
att gtg ctt ggc cga ccc cca aac act gag gac aga gaa agc cct tct			1488
Ile Val Leu Gly Arg Pro Pro Asn Thr Glu Asp Arg Glu Ser Pro Ser			
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Val Lys Arg Met Arg Met Asp Ala Trp Val Thr			
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Arg Gln Val Thr Phe Thr Lys Arg Lys Phe Gly Leu Met Lys Lys Ala			
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Tyr Glu Leu Ser Val Leu Cys Asp Cys Glu Ile Ala Leu Ile Phe			
35	40	45	
Asn Ser Ala Asn Arg Leu Phe Gln Tyr Ala Ser Thr Asp Met Asp Arg			
50	55	60	
Val Leu Leu Lys Tyr Thr Glu Tyr Ser Glu Pro His Glu Ser Arg Thr			
65	70	75	80
Asn Thr Asp Ile Leu Glu Thr Leu Lys Arg Arg Gly Ile Gly Leu Asp			
85	90	95	
Gly Pro Glu Leu Glu Pro Asp Glu Gly Pro Glu Glu Pro Gly Glu Lys			
100	105	110	
Phe Arg Arg Leu Ala Gly Glu Gly Asp Pro Ala Leu Pro Arg Pro			

115	120	125
Arg Leu Tyr Pro Ala Ala Pro Ala Met Pro Ser Pro Asp Val Val Tyr		
130	135	140
Gly Ala Leu Pro Pro Pro Gly Cys Asp Pro Ser Gly Leu Gly Glu Ala		
145	150	155
Leu Pro Ala Gln Ser Arg Pro Ser Pro Phe Arg Pro Ala Ala Pro Lys		
165	170	175
Ala Gly Pro Pro Gly Leu Val His Pro Leu Phe Ser Pro Ser His Leu		
180	185	190
Thr Ser Lys Thr Pro Pro Pro Leu Tyr Leu Pro Thr Glu Gly Arg Arg		
195	200	205
Ser Asp Leu Pro Gly Gly Leu Ala Gly Pro Arg Gly Gly Leu Asn Thr		
210	215	220
Ser Arg Ser Leu Tyr Ser Gly Leu Gln Asn Pro Cys Ser Thr Ala Thr		
225	230	235
Pro Gly Pro Pro Leu Gly Ser Phe Pro Phe Leu Pro Gly Gly Pro Pro		
245	250	255
Val Gly Ala Glu Ala Trp Ala Arg Arg Val Pro Gln Pro Ala Ala Pro		
260	265	270
Pro Arg Arg Pro Pro Gln Ser Ala Ser Ser Leu Ser Ala Ser Leu Arg		
275	280	285
Pro Pro Gly Ala Pro Ala Thr Phe Leu Arg Pro Ser Pro Ile Pro Cys		
290	295	300
Ser Ser Pro Gly Pro Trp Gln Ser Leu Cys Gly Leu Gly Pro Pro Cys		
305	310	315
Ala Gly Cys Pro Trp Pro Thr Ala Gly Pro Gly Arg Arg Ser Pro Gly		
325	330	335
Gly Thr Ser Pro Glu Arg Ser Pro Gly Thr Ala Arg Ala Arg Gly Asp		
340	345	350
Pro Thr Ser Leu Gln Ala Ser Ser Glu Lys Thr Gln Gln		
355	360	
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Met	Gly	Arg	Lys	Lys	Ile	Gln	Ile	Ser	Arg	Ile	Leu	Asp	Gln	Arg	Asn	
1		5			10										15	
cgg	cag	gtg	acg	ttc	acc	aag	cgg	aag	ttc	ggg	ctg	atg	aag	aag	gcc	96
Arg	Gln	Val	Thr	Phe	Thr	Lys	Arg	Lys	Phe	Gly	Leu	Met	Lys	Lys	Ala	
		20				25									30	
tat	gag	ctg	agc	gtg	ctc	tgt	gac	tgt	gag	ata	gcc	ctc	atc	atc	ttc	144
Tyr	Glu	Leu	Ser	Val	Leu	Cys	Asp	Cys	Glu	Ile	Ala	Leu	Ile	Ile	Phe	
		35				40									45	
aac	agc	gcc	aac	cgc	ctc	ttc	cag	tat	gcc	agc	acg	gac	atg	gac	cgt	192
Asn	Ser	Ala	Asn	Arg	Leu	Phe	Gln	Tyr	Ala	Ser	Thr	Asp	Met	Asp	Arg	
		50				55									60	
gtg	ctg	ctg	aag	tac	aca	gag	tac	agc	gag	ccc	cac	gag	agc	cgc	acc	240
Val	Leu	Leu	Lys	Tyr	Thr	Glu	Tyr	Ser	Glu	Pro	His	Glu	Ser	Arg	Thr	
		65			70										80	
aac	act	gac	atc	ctc	gag	acg	ctg	aag	cgg	agg	ggc	att	ggc	ctc	gat	288
Asn	Thr	Asp	Ile	Leu	Glu	Thr	Leu	Lys	Arg	Arg	Gly	Ile	Gly	Leu	Asp	
		85				90									95	
ggg	cca	gag	ctg	gag	ccg	gat	gaa	ggg	cct	gag	gag	cca	gga	gag	aag	336
Gly	Pro	Glu	Leu	Glu	Pro	Asp	Glu	Gly	Pro	Glu	Glu	Pro	Gly	Glu	Lys	
		100				105									110	
ttt	cgg	agg	ctg	gca	ggc	gaa	ggg	ggt	gat	ccg	gcc	ttg	ccc	cga	ccc	384
Phe	Arg	Arg	Leu	Ala	Gly	Glu	Gly	Gly	Asp	Pro	Ala	Leu	Pro	Arg	Pro	
		115			120										125	
cgg	ctg	tat	cct	gca	gct	cct	gct	atg	ccc	agc	cca	gat	gtg	gtc	tac	432
Arg	Leu	Tyr	Pro	Ala	Ala	Pro	Ala	Met	Pro	Ser	Pro	Asp	Val	Val	Tyr	
		130			135										140	
ggg	gcc	tta	ccg	cca	cca	ggc	tgt	gac	ccc	agt	ggg	ctt	ggg	gaa	gca	480
Gly	Ala	Leu	Pro	Pro	Pro	Gly	Cys	Asp	Pro	Ser	Gly	Leu	Gly	Glu	Ala	
		145			150										160	
ctg	ccc	gcc	cag	agc	cgc	cca	tct	ccc	ttc	cga	cca	gca	gcc	ccc	aaa	528
Leu	Pro	Ala	Gln	Ser	Arg	Pro	Ser	Pro	Phe	Arg	Pro	Ala	Ala	Pro	Lys	
		165				170									175	

gcc ggg ccc cca ggc ctg gtg cac cct ctc ttc tca cca agc cac ctc			576
Ala Gly Pro Pro Gly Leu Val His Pro Leu Phe Ser Pro Ser His Leu			
180	185	190	
acc agc aag aca cca ccc cca ctg tac ctg ccg acg gaa ggg cg agg			624
Thr Ser Lys Thr Pro Pro Leu Tyr Leu Pro Thr Glu Gly Arg Arg			
195	200	205	
tca gac ctg cct ggt ggc ctg gct ggg ccc cga ggg gga cta aac acc			672
Ser Asp Leu Pro Gly Gly Leu Ala Gly Pro Arg Gly Gly Leu Asn Thr			
210	215	220	
tcc aga agc ctc tac agt ggc ctg cag aac ccc tgc tcc act gca act			720
Ser Arg Ser Leu Tyr Ser Gly Leu Gln Asn Pro Cys Ser Thr Ala Thr			
225	230	235	240
ccc gga ccc cca ctg ggg agc ttc ccc ttc ctc ccc gga ggc ccc cca			768
Pro Gly Pro Pro Leu Gly Ser Phe Pro Phe Leu Pro Gly Gly Pro Pro			
245	250	255	
gtg ggg gcc gaa gcc tgg gcg agg agg gtc ccc caa ccc gcg gcg cct			816
Val Gly Ala Glu Ala Trp Ala Arg Arg Val Pro Gln Pro Ala Ala Pro			
260	265	270	
ccc cgc cga ccc ccc cag tca gca tca agt ctg agc gcc tct ctc cgg			864
Pro Arg Arg Pro Pro Gln Ser Ala Ser Ser Leu Ser Ala Ser Leu Arg			
275	280	285	
ccc ccg ggg gcc ccg gcg act ttc cta aga cct tcc cct atc cct tgc			912
Pro Pro Gly Ala Pro Ala Thr Phe Leu Arg Pro Ser Pro Ile Pro Cys			
290	295	300	
tcc tcg ccc ggt ccc tgg cag agc ctc tgc ggc ctg ggc ccg ccc tgc			960
Ser Ser Pro Gly Pro Trp Gln Ser Leu Cys Gly Leu Gly Pro Pro Cys			
305	310	315	320
gcc ggc tgc cct tgg ccg acg gct ggc ccc ggt agg aga tca ccc ggt			1008
Ala Gly Cys Pro Trp Pro Thr Ala Gly Pro Gly Arg Arg Ser Pro Gly			
325	330	335	
ggc acc agc cca gag cgc tcg cca ggt acg gcg agg gca cgt ggg gac			1056
Gly Thr Ser Pro Glu Arg Ser Pro Gly Thr Ala Arg Ala Arg Gly Asp			
340	345	350	
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Pro Thr Ser Leu Gln Ala Ser Ser Glu Lys Thr Gln Gln			
355	360	365	

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Arg Gln Val Thr Phe Thr Lys Arg Lys Phe Gly Leu Met Lys Lys Ala  
20 25 30

Tyr Glu Leu Ser Val Leu Cys Asp Cys Glu Ile Ala Leu Ile Ile Phe  
35 40 45

Asn Ser Thr Asn Lys Leu Phe Gln Tyr Ala Ser Thr Asp Met Asp Lys  
50 55 60

Val Leu Leu Lys Tyr Thr Glu Tyr Asn Glu Pro His Glu Ser Arg Thr  
65 70 75 80

Asn Ser Asp Ile Val Glu Thr Leu Arg Lys Lys Gly Leu Asn Gly Cys  
85 90 95

Asp Ser Pro Asp Pro Asp Ala Asp Asp Ser Val Gly His Ser Pro Glu  
100 105 110

Ser Glu Asp Lys Tyr Arg Lys Ile Asn Glu Asp Ile Asp Leu Met Ile  
115 120 125

Ser Arg Gln Arg Leu Cys Ala Val Pro Pro Pro Asn Phe Glu Met Pro  
130 135 140

Val Ser Ile Pro Val Ser Ser His Asn Ser Leu Val Tyr Ser Asn Pro  
145 150 155 160

Val Ser Ser Leu Gly Asn Pro Asn Leu Leu Pro Leu Ala His Pro Ser  
165 170 175

Leu Gln Arg Asn Ser Met Ser Pro Gly Val Thr His Arg Pro Pro Ser  
180 185 190

Ala Gly Asn Thr Gly Gly Leu Met Gly Gly Asp Leu Thr Ser Gly Ala  
195 200 205

Gly Thr Ser Ala Gly Asn Gly Tyr Gly Asn Pro Arg Asn Ser Pro Gly  
210 215 220

Leu Leu Val Ser Pro Gly Asn Leu Asn Lys Asn Met Gln Ala Lys Ser  
225 230 235 240

Pro Pro Pro Met Asn Leu Gly Met Asn Asn Arg Lys Pro Asp Leu Arg

245	250	255
Val Leu Ile Pro Pro Gly Ser Lys Asn Thr Met Pro Ser Val Asn Gln		
260	265	270
Arg Ile Asn Asn Ser Gln Ser Ala Gln Ser Leu Ala Thr Pro Val Val		
275	280	285
Ser Val Ala Thr Pro Thr Leu Pro Gly Gln Gly Met Gly Gly Tyr Pro		
290	295	300
Ser Ala Ile Ser Thr Thr Tyr Gly Thr Glu Tyr Ser Leu Ser Ser Ala		
305	310	315
Asp Leu Ser Ser Leu Ser Gly Phe Asn Thr Ala Ser Ala Leu His Leu		
325	330	335
Gly Ser Val Thr Gly Trp Gln Gln His Leu His Asn Met Pro Pro		
340	345	350
Ser Ala Leu Ser Gln Leu Gly Ala Cys Thr Ser Thr His Leu Ser Gln		
355	360	365
Ser Ser Asn Leu Ser Leu Pro Ser Thr Gln Ser Leu Asn Ile Lys Ser		
370	375	380
Glu Pro Val Ser Pro Pro Arg Asp Arg Thr Thr Thr Pro Ser Arg Tyr		
385	390	395
Pro Gln His Thr Arg His Glu Ala Gly Arg Ser Pro Val Asp Ser Leu		
405	410	415
Ser Ser Cys Ser Ser Ser Tyr Asp Gly Ser Asp Arg Glu Asp His Arg		
420	425	430
Asn Glu Phe His Ser Pro Ile Gly Leu Thr Arg Pro Ser Pro Asp Glu		
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Arg Glu Ser Pro Ser Val Lys Arg Met Arg Leu Ser Glu Gly Trp Ala		
450	455	460
Thr		
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15		
aga cag gtg aca ttt aca aag agg aaa ttt ggg ttg atg aag aag gct		96
Arg Gln Val Thr Phe Thr Lys Arg Lys Phe Gly Leu Met Lys Lys Ala		
20	25	30
Tyr Glu Leu Ser Val Leu Cys Asp Cys Glu Ile Ala Leu Ile Phe		
35	40	45
aac agc acc aac aag ctg ttc cag tat gcc agc acc gac atg gac aaa		192
Asn Ser Thr Asn Lys Leu Phe Gln Tyr Ala Ser Thr Asp Met Asp Lys		
50	55	60
gtg ctt ctc aag tac acg gag tac aac gag ccg cat gag agc cgg aca		240
Val Leu Leu Lys Tyr Thr Glu Tyr Asn Glu Pro His Glu Ser Arg Thr		
65	70	75
80		
aac tca gac atc gtg gag acg ttg aga aag aag ggc ctt aat ggc tgt		288
Asn Ser Asp Ile Val Glu Thr Leu Arg Lys Lys Gly Leu Asn Gly Cys		
85	90	95
gac agc cca gac ccc gat gcg gac gat tcc gta ggt cac agc cct gag		336
Asp Ser Pro Asp Pro Asp Ala Asp Asp Ser Val Gly His Ser Pro Glu		
100	105	110
tct gag gac aag tac agg aaa att aac gaa gat att gat cta atg atc		384
Ser Glu Asp Lys Tyr Arg Lys Ile Asn Glu Asp Ile Asp Leu Met Ile		
115	120	125
agc agg caa aga ttg tgt gct gtt cca cct ccc aac ttc gag atg cca		432
Ser Arg Gln Arg Leu Cys Ala Val Pro Pro Asn Phe Glu Met Pro		
130	135	140
gtc tcc atc cca gtg tcc agc cac aac agt ttg gtg tac agc aac cct		480
Val Ser Ile Pro Val Ser Ser His Asn Ser Leu Val Tyr Ser Asn Pro		
145	150	155
160		
gtc agc tca ctg gga aac ccc aac cta ttg cca ctg gct cac cct tct		528
Val Ser Ser Leu Gly Asn Pro Asn Leu Leu Pro Leu Ala His Pro Ser		
165	170	175
ctg cag agg aat agt atg tct cct ggt gta aca cat cga cct cca agt		576
Leu Gln Arg Asn Ser Met Ser Pro Gly Val Thr His Arg Pro Pro Ser		
180	185	190

gca ggt aac aca ggt ggt ctg atg ggt gga gac ctc acg tct ggt gca			624
Ala Gly Asn Thr Gly Gly Leu Met Gly Gly Asp Leu Thr Ser Gly Ala			
195	200	205	
ggc acc agt gca ggg aac ggg tat ggc aat ccc cga aac tca cca ggt			672
Gly Thr Ser Ala Gly Asn Gly Tyr Gly Asn Pro Arg Asn Ser Pro Gly			
210	215	220	
ctg ctg gtc tca cct ggt aac ttg aac aag aat atg caa gca aaa tct			720
Leu Leu Val Ser Pro Gly Asn Leu Asn Lys Asn Met Gln Ala Lys Ser			
225	230	235	240
cct ccc cca atg aat tta gga atg aat aac cgt aaa cca gat ctc cga			768
Pro Pro Pro Met Asn Leu Gly Met Asn Asn Arg Lys Pro Asp Leu Arg			
245	250	255	
gtt ctt att cca cca ggc agc aag aat acg atg cca tca gtg aat caa			816
Val Leu Ile Pro Pro Gly Ser Lys Asn Thr Met Pro Ser Val Asn Gln			
260	265	270	
agg ata aat aac tcc cag tcg gct cag tca ttg gct acc cca gtg gtt			864
Arg Ile Asn Asn Ser Gln Ser Ala Gln Ser Leu Ala Thr Pro Val Val			
275	280	285	
tcc gta gca act cct act tta cca gga caa gga atg gga gga tat cca			912
Ser Val Ala Thr Pro Thr Leu Pro Gly Gln Gly Met Gly Gly Tyr Pro			
290	295	300	
tca gcc att tca aca aca tat ggt acc gag tac tct ctg agt agt gca			960
Ser Ala Ile Ser Thr Thr Tyr Gly Thr Glu Tyr Ser Leu Ser Ser Ala			
305	310	315	320
gac ctg tca tct ctg tct ggg ttt aac acc gcc agc gct ctt cac ctt			1008
Asp Leu Ser Ser Leu Ser Gly Phe Asn Thr Ala Ser Ala Leu His Leu			
325	330	335	
ggt tca gta act ggc tgg caa cag caa cac cta cat aac atg cca cca			1056
Gly Ser Val Thr Gly Trp Gln Gln His Leu His Asn Met Pro Pro			
340	345	350	
tct gcc ctc agt cag ttg gga gct tgc act agc act cat tta tct cag			1104
Ser Ala Leu Ser Gln Leu Gly Ala Cys Thr Ser Thr His Leu Ser Gln			
355	360	365	
agt tca aat ctc tcc ctg cct act caa agc ctc aac atc aag tca			1152
Ser Ser Asn Leu Ser Leu Pro Ser Thr Gln Ser Leu Asn Ile Lys Ser			
370	375	380	

gaa cct gtt tct cct cct aga gac cgt acc acc acc cct tcg aga tac				1200
Glu Pro Val Ser Pro Pro Arg Asp Arg Thr Thr Thr Pro Ser Arg Tyr				
385	390	395	400	
cca caa cac acg cgc cac gag gcg ggg aga tct cct gtt gac agc ttg				1248
Pro Gln His Thr Arg His Glu Ala Gly Arg Ser Pro Val Asp Ser Leu				
405	410	415		
agc agc tgt agc agt tcg tac gac ggg agc gac cga gag gat cac cgg				1296
Ser Ser Cys Ser Ser Tyr Asp Gly Ser Asp Arg Glu Asp His Arg				
420	425	430		
aac gaa ttc cac tcc ccc att gga ctc acc aga cct tcg ccg gac gaa				1344
Asn Glu Phe His Ser Pro Ile Gly Leu Thr Arg Pro Ser Pro Asp Glu				
435	440	445		
agg gaa agt ccc tca gtc aag cgc atg cga ctt tct gaa gga tgg gca				1392
Arg Glu Ser Pro Ser Val Lys Arg Met Arg Leu Ser Glu Gly Trp Ala				
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aca				1395
Thr				
465				
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Arg Gln Val Thr Phe Thr Lys Arg Lys Phe Gly Leu Met Lys Lys Ala				
20	25	30		
Tyr Glu Leu Ser Val Leu Cys Asp Cys Glu Ile Ala Leu Ile Phe				
35	40	45		
Asn His Ser Asn Lys Leu Phe Gln Tyr Ala Ser Thr Asp Met Asp Lys				
50	55	60		
Val Leu Leu Lys Tyr Thr Glu Tyr Asn Glu Pro His Glu Ser Arg Thr				
65	70	75	80	
Asn Ala Asp Ile Ile Glu Thr Leu Arg Lys Lys Gly Phe Asn Gly Cys				
85	90	95		
Asp Ser Pro Glu Pro Asp Gly Glu Asp Ser Leu Glu Gln Ser Pro Leu				

	100	105	110
Leu Glu Asp Lys Tyr Arg Arg Ala Ser Glu Glu Leu Asp Gly Leu Phe			
115	120	125	
Arg Arg Tyr Gly Ser Thr Val Pro Ala Pro Asn Phe Ala Met Pro Val			
130	135	140	
Thr Val Pro Val Ser Asn Gln Ser Ser Leu Gln Phe Ser Asn Pro Ser			
145	150	155	160
Gly Ser Leu Val Thr Pro Ser Leu Val Thr Ser Ser Leu Thr Asp Pro			
165	170	175	
Arg Leu Leu Ser Pro Gln Gln Pro Ala Leu Gln Arg Asn Ser Val Ser			
180	185	190	
Pro Gly Leu Pro Gln Arg Pro Ala Ser Ala Gly Ala Met Leu Gly Gly			
195	200	205	
Asp Leu Asn Ser Ala Asn Gly Ala Cys Pro Ser Pro Val Gly Asn Gly			
210	215	220	
Tyr Val Ser Ala Arg Ala Ser Pro Gly Leu Leu Pro Val Ala Asn Gly			
225	230	235	240
Asn Ser Leu Asn Lys Val Ile Pro Ala Lys Ser Pro Pro Pro Thr			
245	250	255	
His Ser Thr Gln Leu Gly Ala Pro Ser Arg Lys Pro Asp Leu Arg Val			
260	265	270	
Ile Thr Ser Gln Ala Gly Lys Gly Leu Met His His Leu Thr Glu Asp			
275	280	285	
His Leu Asp Leu Asn Asn Ala Gln Arg Leu Gly Val Ser Gln Ser Thr			
290	295	300	
His Ser Leu Thr Thr Pro Val Val Ser Val Ala Thr Pro Ser Leu Leu			
305	310	315	320
Ser Gln Gly Leu Pro Phe Ser Ser Met Pro Thr Ala Tyr Asn Thr Asp			
325	330	335	
Tyr Gln Leu Thr Ser Ala Glu Leu Ser Ser Leu Pro Ala Phe Ser Ser			
340	345	350	
Pro Gly Gly Leu Ser Leu Gly Asn Val Thr Ala Trp Gln Gln Pro Gln			
355	360	365	
Gln Pro Gln Gln Pro Gln Gln Pro Gln Pro Pro Gln Gln Pro Pro			
370	375	380	
Gln Pro Gln Gln Pro Gln Gln Pro Gln Gln Pro Gln Gln Pro			

385	390	395	400
Pro Gln Gln Gln Ser His Leu Val Pro Val Ser Leu Ser Asn Leu Ile			
405		410	415
Pro Gly Ser Pro Leu Pro His Val Gly Ala Ala Leu Thr Val Thr Thr			
420		425	430
His Pro His Ile Ser Ile Lys Ser Glu Pro Val Ser Pro Ser Arg Glu			
435		440	445
Arg Ser Pro Ala Pro Pro Pro Ala Val Phe Pro Ala Ala Arg Pro			
450		455	460
Glu Pro Gly Asp Gly Leu Ser Ser Pro Ala Gly Gly Ser Tyr Glu Thr			
465		470	475
Gly Asp Arg Asp Asp Gly Arg Gly Asp Phe Gly Pro Thr Leu Gly Leu			
485		490	495
Leu Arg Pro Ala Pro Glu Pro Glu Ala Glu Gly Ser Ala Val Lys Arg			
500		505	510
Met Arg Leu Asp Thr Trp Thr Leu Lys			
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cga cag gtg act ttc acc aag cgg aag ttt ggc ctg atg aag aag gcg 96			
Arg Gln Val Thr Phe Thr Lys Arg Lys Phe Gly Leu Met Lys Lys Ala			
20	25	30	
tat gag ctg agc gtg cta tgt gac tgc gag atc gca ctc atc atc ttc 144			
Tyr Glu Leu Ser Val Leu Cys Asp Cys Glu Ile Ala Leu Ile Ile Phe			
35	40	45	
aac cac tcc aac aag ctg ttc cag tac gcc agc acc gac atg gac aag 192			
Asn His Ser Asn Lys Leu Phe Gln Tyr Ala Ser Thr Asp Met Asp Lys			

50	55	60	
gtg ctg ctc aag tac acg gag tac aat gag cca cac gag agc cgc acc			240
Val Leu Leu Lys Tyr Thr Glu Tyr Asn Glu Pro His Glu Ser Arg Thr			
65	70	75	80
aac gcc gac atc atc gag acc ctg agg aag aag ggc ttc aat ggc tgc			288
Asn Ala Asp Ile Ile Glu Thr Leu Arg Lys Lys Gly Phe Asn Gly Cys			
85	90	95	
gac agc ccc gag ccc gac ggg gag gac tcg ctg gaa cag agc ccc ctg			336
Asp Ser Pro Glu Pro Asp Gly Glu Asp Ser Leu Glu Gln Ser Pro Leu			
100	105	110	
ctg gag gac aag tac cga cgc gcc agc gag gag ctc gac ggg ctc ttc			384
Leu Glu Asp Lys Tyr Arg Arg Ala Ser Glu Glu Leu Asp Gly Leu Phe			
115	120	125	
cgg cgc tat ggg tca act gtc ccg gcc ccc aac ttt gcc atg cct gtc			432
Arg Arg Tyr Gly Ser Thr Val Pro Ala Pro Asn Phe Ala Met Pro Val			
130	135	140	
acg gtg ccc gtg tcc aat cag agc tca ctg cag ttc agc aat ccc agc			480
Thr Val Pro Val Ser Asn Gln Ser Ser Leu Gln Phe Ser Asn Pro Ser			
145	150	155	160
ggc tcc ctg gtc acc cct tcc ctg gtg aca tca tcc ctc acg gac ccg			528
Gly Ser Leu Val Thr Pro Ser Leu Val Thr Ser Ser Leu Thr Asp Pro			
165	170	175	
cggtt ctc ctg tcc ccc cag cag cca gca cta cag agg aac agt gtg tct			576
Arg Leu Leu Ser Pro Gln Gln Pro Ala Leu Gln Arg Asn Ser Val Ser			
180	185	190	
cct ggc ctg ccc cag cgg cca gct agt gcg ggg gcc atg ctg ggg ggt			624
Pro Gly Leu Pro Gln Arg Pro Ala Ser Ala Gly Ala Met Leu Gly Gly			
195	200	205	
gac ctg aac agt gct aac gga gcc tgc ccc agc cct gtt ggg aat ggc			672
Asp Leu Asn Ser Ala Asn Gly Ala Cys Pro Ser Pro Val Gly Asn Gly			
210	215	220	
tac gtc agt gct cgg gct tcc cct ggc ctc ctc cct gtg gcc aat ggc			720
Tyr Val Ser Ala Arg Ala Ser Pro Gly Leu Leu Pro Val Ala Asn Gly			
225	230	235	240
aac agc cta aac aag gtc atc cct gcc aag tct ccg ccc cca cct acc			768
Asn Ser Leu Asn Lys Val Ile Pro Ala Lys Ser Pro Pro Pro Thr			

245	250	255	
cac agc acc cag ctt gga gcc ccc agc cgc aag ccc gac ctg cga gtc			816
His Ser Thr Gln Leu Gly Ala Pro Ser Arg Lys Pro Asp Leu Arg Val			
260	265	270	
atc act tcc cag gca gga aag ggg tta atg cat cac ttg act gag gac			864
Ile Thr Ser Gln Ala Gly Lys Gly Leu Met His His Leu Thr Glu Asp			
275	280	285	
cat tta gat ctg aac aat gcc cag cgc ctt ggg gtc tcc cag tct act			912
His Leu Asp Leu Asn Asn Ala Gln Arg Leu Gly Val Ser Gln Ser Thr			
290	295	300	
cat tcg ctc acc acc cca gtg gtt tct gtg gca acg ccg agt tta ctc			960
His Ser Leu Thr Thr Pro Val Val Ser Val Ala Thr Pro Ser Leu Leu			
305	310	315	320
agc cag ggc ctc ccc ttc tct tcc atg ccc act gcc tac aac aca gat			1008
Ser Gln Gly Leu Pro Phe Ser Ser Met Pro Thr Ala Tyr Asn Thr Asp			
325	330	335	
tac cag ttg acc agt gca gag ctc tcc tta cca gcc ttt agt tca			1056
Tyr Gln Leu Thr Ser Ala Glu Leu Ser Ser Leu Pro Ala Phe Ser Ser			
340	345	350	
cct ggg ggg ctg tcg cta ggc aat gtc act gcc tgg caa cag cca cag			1104
Pro Gly Gly Leu Ser Leu Gly Asn Val Thr Ala Trp Gln Gln Pro Gln			
355	360	365	
cag ccc cag cag ccg cag cag cca cag cct cca cag cag cca ccg			1152
Gln Pro Gln Gln Pro Gln Gln Pro Gln Pro Pro Gln Gln Gln Pro Pro			
370	375	380	
cag cca cag cag cca cag cag cct cag cag ccg caa cag cca			1200
Gln Pro Gln Pro			
385	390	395	400
cct cag caa cag tcc cac ctg gtc cct gta tct ctc agc aac ctc atc			1248
Pro Gln Gln Gln Ser His Leu Val Pro Val Ser Leu Ser Asn Leu Ile			
405	410	415	
ccg ggc agc ccc ctg ccc cac gtg ggt gct gcc ctc aca gtc acc acc			1296
Pro Gly Ser Pro Leu Pro His Val Gly Ala Ala Leu Thr Val Thr Thr			
420	425	430	
cac ccc cac atc agc atc aag tca gaa ccg gtg tcc cca agc cgt gag			1344
His Pro His Ile Ser Ile Lys Ser Glu Pro Val Ser Pro Ser Arg Glu			

435	440	445	
cgc agc cct gcg cct ccc cct cca gct gtg ttc cca gct gcc cgc cct			1392
Arg Ser Pro Ala Pro Pro Pro Ala Val Phe Pro Ala Ala Arg Pro			
450	455	460	
gag cct ggc gat ggt ctc agc agc cca gcc ggg gga tcc tat gag acg			1440
Glu Pro Gly Asp Gly Leu Ser Ser Pro Ala Gly Gly Ser Tyr Glu Thr			
465	470	475	480
gga gac cgg gat gac gga cgg ggg gac ttc ggg ccc aca ctg ggc ctg			1488
Gly Asp Arg Asp Asp Gly Arg Gly Asp Phe Gly Pro Thr Leu Gly Leu			
485	490	495	
ctg cgc cca gcc cca gag cct gag gct gag ggc tca gct gtg aag agg			1536
Leu Arg Pro Ala Pro Glu Pro Glu Ala Glu Gly Ser Ala Val Lys Arg			
500	505	510	
atg cgg ctt gat acc tgg aca tta aag			1563
Met Arg Leu Asp Thr Trp Thr Leu Lys			
515	520		
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Gly Tyr Pro Phe Ala			
20	25	30	
Ser Arg Cys Ser His Glu Glu Asn Pro Tyr Phe His Gly Trp Leu Ile			
35	40	45	
Gly His Pro Glu Met Ser Pro Pro Asp Tyr Ser Met Ala Leu Ser Tyr			
50	55	60	
Ser Pro Glu Tyr Ala Ser Gly Ala Ala Gly Leu Asp His Ser His Tyr			
65	70	75	80
Gly Gly Val Pro Pro Gly Ala Gly Pro Pro Gly Leu Gly Gly Pro Arg			
85	90	95	
Pro Val Lys Arg Arg Gly Thr Ala Asn Arg Lys Glu Arg Arg Arg Thr			
100	105	110	
Gln Ser Ile Asn Ser Ala Phe Ala Glu Leu Arg Glu Cys Ile Pro Asn			

115	120	125	
Val Pro Ala Asp Thr Lys Leu Ser Lys Ile Lys Thr Leu Arg Leu Ala			
130	135	140	
Thr Ser Tyr Ile Ala Tyr Leu Met Asp Leu Leu Ala Lys Asp Asp Gln			
145	150	155	160
Asn Gly Glu Ala Glu Ala Phe Lys Ala Glu Ile Lys Lys Thr Asp Val			
165	170	175	
Lys Glu Glu Lys Arg Lys Glu Leu Asn Glu Ile Leu Lys Ser Thr			
180	185	190	
Val Ser Ser Asn Asp Lys Lys Thr Lys Gly Arg Thr Gly Trp Pro Gln			
195	200	205	
His Val Trp Ala Leu Glu Leu Lys Gln			
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Met Ser Leu Val Gly Gly Phe Pro His His Pro Val Val His His Glu			
1	5	10	15
ggc tac ccg ttc gcc gca gca gcc gcc gct gct gct gcc gcc gcc			96
Gly Tyr Pro Phe Ala			
20	25	30	
agc cgc tgc agt cac gag gag aac ccc tat ttc cac ggc tgg ctt att			144
Ser Arg Cys Ser His Glu Glu Asn Pro Tyr Phe His Gly Trp Leu Ile			
35	40	45	
ggc cac ccg gag atg tcg ccc ccc gac tac agc atg gcc ctg tcc tac			192
Gly His Pro Glu Met Ser Pro Pro Asp Tyr Ser Met Ala Leu Ser Tyr			
50	55	60	
agt ccc gag tac gcc agc ggt gcc gcg ggc ctg gac cac tcc cat tat			240
Ser Pro Glu Tyr Ala Ser Gly Ala Ala Gly Leu Asp His Ser His Tyr			
65	70	75	80

ggg gga gtg ccg ccc ggt gcc ggg cct ccc ggc ctg ggg ggg ccg cgc			288
Gly Gly Val Pro Pro Gly Ala Gly Pro Pro Gly Leu Gly Gly Pro Arg			
85	90	95	
ccg gtg aag cgt cgg ggc acc gcc aac cgc aag gag cgg cgc agg act			336
Pro Val Lys Arg Arg Gly Thr Ala Asn Arg Lys Glu Arg Arg Arg Thr			
100	105	110	
cag agc atc aac agc gcc ttc gcc gag ctg cgc gag tgc atc ccc aac			384
Gln Ser Ile Asn Ser Ala Phe Ala Glu Leu Arg Glu Cys Ile Pro Asn			
115	120	125	
gtg ccc gcc gac acc aaa ctc tcc aaa atc aag act ctg cgc ctg gcc			432
Val Pro Ala Asp Thr Lys Leu Ser Lys Ile Lys Thr Leu Arg Leu Ala			
130	135	140	
acc agc tac atc gcc tac ctc atg gat ctg ctg gcc aag gac gac cag			480
Thr Ser Tyr Ile Ala Tyr Leu Met Asp Leu Leu Ala Lys Asp Asp Gln			
145	150	155	160
aac gga gag gcg gag gcc ttc aag gcg gag atc aag aag acc gac gtg			528
Asn Gly Glu Ala Glu Ala Phe Lys Ala Glu Ile Lys Lys Thr Asp Val			
165	170	175	
aaa gag gag aag agg aag aaa gag ctg aat gaa atc ttg aaa agt aca			576
Lys Glu Glu Lys Arg Lys Glu Leu Asn Glu Ile Leu Lys Ser Thr			
180	185	190	
gtg agc agc aac gac aag aaa acc aaa ggc cgg aca ggc tgg cca cag			624
Val Ser Ser Asn Asp Lys Lys Thr Lys Gly Arg Thr Gly Trp Pro Gln			
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cac gtc tgg gcc ctg gag ctc aag cag			651
His Val Trp Ala Leu Glu Leu Lys Gln			
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1	5	10	15
His Pro Ala His Pro Met Leu His Glu Pro Phe Leu Phe Gly Pro Ala			
20	25	30	

Ser Arg Cys His Gln Glu Arg Pro Tyr Phe Gln Ser Trp Leu Leu Ser  
                  35                 40                 45  
 Pro Ala Asp Ala Ala Pro Asp Phe Pro Ala Gly Gly Pro Pro Pro Ala  
                  50                 55                 60  
 Ala Ala Ala Ala Ala Thr Ala Tyr Gly Pro Asp Ala Arg Pro Gly Gln  
                  65                 70                 75                 80  
 Ser Pro Gly Arg Leu Glu Ala Leu Gly Gly Arg Leu Gly Arg Arg Lys  
                  85                 90                 95  
 Gly Ser Gly Pro Lys Lys Glu Arg Arg Arg Thr Glu Ser Ile Asn Ser  
                  100                105                110  
 Ala Phe Ala Glu Leu Arg Glu Cys Ile Pro Asn Val Pro Ala Asp Thr  
                  115                120                125  
 Lys Leu Ser Lys Ile Lys Thr Leu Arg Leu Ala Thr Ser Tyr Ile Ala  
                  130                135                140  
 Tyr Leu Met Asp Val Leu Ala Lys Asp Ala Gln Ser Gly Asp Pro Glu  
                  145                150                155                160  
 Ala Phe Lys Ala Glu Leu Lys Lys Ala Asp Gly Gly Arg Glu Ser Lys  
                  165                170                175  
 Arg Lys Arg Glu Leu Gln Gln His Glu Gly Phe Pro Pro Ala Leu Gly  
                  180                185                190  
 Pro Val Glu Lys Arg Ile Lys Gly Arg Thr Gly Trp Pro Gln Gln Val  
                  195                200                205  
 Trp Ala Leu Glu Leu Asn Gln  
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 Met Asn Leu Val Gly Ser Tyr Ala His His His His His His Pro  
                  1                 5                 10                 15  
 cac cct gcg cac ccc atg ctc cac gaa ccc ttc ctc ttc ggt ccg gcc   96

His	Pro	Ala	His	Pro	Met	Leu	His	Glu	Pro	Phe	Leu	Phe	Gly	Pro	Ala	
					20				25				30			
tcg	cgc	tgt	cat	cag	gaa	agg	ccc	tac	ttc	cag	agc	tgg	ctg	ctg	agc	144
Ser	Arg	Cys	His	Gln	Glu	Arg	Pro	Tyr	Phe	Gln	Ser	Trp	Leu	Leu	Ser	
					35				40				45			
ccg	gct	gac	gct	gcc	ccg	gac	ttc	cct	gcg	ggc	ggg	ccg	ccg	ccc	gcg	192
Pro	Ala	Asp	Ala	Ala	Pro	Asp	Phe	Pro	Ala	Gly	Gly	Pro	Pro	Pro	Ala	
					50				55			60				
gcc	gct	gca	gcc	gcc	acc	gcc	tat	ggt	cct	gac	gcc	agg	cct	ggg	cag	240
Ala	Thr	Ala	Tyr	Gly	Pro	Asp	Ala	Arg	Pro	Gln						
					65				70			75			80	
agc	ccc	ggg	cgg	ctg	gag	gcg	ctt	ggc	cgt	ctt	ggc	cgg	cgg	aaa		288
Ser	Pro	Gly	Arg	Leu	Glu	Ala	Leu	Gly	Gly	Arg	Leu	Gly	Arg	Arg	Lys	
					85				90			95				
ggc	tca	gga	ccc	aag	aag	gag	cgg	aga	cgc	act	gag	agc	att	aac	agc	336
Gly	Ser	Gly	Pro	Lys	Lys	Glu	Arg	Arg	Arg	Arg	Thr	Glu	Ser	Ile	Asn	Ser
					100				105			110				
gca	ttc	gcg	gag	ttg	cgc	gag	tgc	atc	ccc	aac	gtg	ccg	gcc	gac	acc	384
Ala	Phe	Ala	Glu	Leu	Arg	Glu	Cys	Ile	Pro	Asn	Val	Pro	Ala	Asp	Thr	
					115				120			125				
aag	ctc	tcc	aag	atc	aag	act	ctg	cgc	cta	gcc	acc	agc	tac	atc	gcc	432
Lys	Leu	Ser	Lys	Ile	Lys	Thr	Leu	Arg	Leu	Ala	Thr	Ser	Tyr	Ile	Ala	
					130				135			140				
tac	ctg	atg	gac	gtg	ctg	gcc	aag	gat	gca	cag	tct	ggc	gat	ccc	gag	480
Tyr	Leu	Met	Asp	Val	Leu	Ala	Lys	Asp	Ala	Gln	Ser	Gly	Asp	Pro	Glu	
					145				150			155			160	
gcc	ttc	aag	gct	gaa	ctc	aag	aag	gcg	gat	ggc	ggc	cgt	gag	agc	aag	528
Ala	Phe	Lys	Ala	Glu	Leu	Lys	Lys	Ala	Asp	Gly	Gly	Arg	Glu	Ser	Lys	
					165				170			175				
cgg	aaa	agg	gag	ctg	cag	cag	cac	gaa	ggt	ttt	cct	cct	gcc	ctg	ggc	576
Arg	Lys	Arg	Glu	Leu	Gln	Gln	His	Glu	Gly	Phe	Pro	Pro	Ala	Leu	Gly	
					180				185			190				
cca	gtc	gag	aag	agg	att	aaa	gga	cgc	acc	ggc	tgg	ccg	cag	caa	gtc	624
Pro	Val	Glu	Lys	Arg	Ile	Lys	Gly	Arg	Thr	Gly	Trp	Pro	Gln	Gln	Val	
					195				200			205				
tgg	gcg	ctg	gag	tta	aac	cag										645

Trp Ala Leu Glu Leu Asn Gln  
210 215  
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<211> 411  
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<400> 25

Met Glu Arg Met Ser Asp Ser Ala Asp Lys Pro Ile Asp Asn Asp Ala  
1 5 10 15  
Glu Gly Val Trp Ser Pro Asp Ile Glu Gln Ser Phe Gln Glu Ala Leu  
20 25 30  
Ala Ile Tyr Pro Pro Cys Gly Arg Arg Lys Ile Ile Leu Ser Asp Glu  
35 40 45  
Gly Lys Met Tyr Gly Arg Asn Glu Leu Ile Ala Arg Tyr Ile Lys Leu  
50 55 60  
Arg Thr Gly Lys Thr Arg Thr Arg Lys Gln Val Ser Ser His Ile Gln  
65 70 75 80  
Val Leu Ala Arg Arg Lys Ser Arg Asp Phe His Ser Lys Leu Lys Asp  
85 90 95  
Gln Thr Ala Lys Asp Lys Ala Leu Gln His Met Ala Ala Met Ser Ser  
100 105 110  
Ala Gln Ile Val Ser Ala Thr Ala Ile His Asn Lys Leu Gly Leu Pro  
115 120 125  
Gly Ile Pro Arg Pro Thr Phe Pro Gly Ala Pro Gly Phe Trp Pro Gly  
130 135 140  
Met Ile Gln Thr Gly Gln Pro Gly Ser Ser Gln Asp Val Lys Pro Phe  
145 150 155 160  
Val Gln Gln Ala Tyr Pro Ile Gln Pro Ala Val Thr Ala Pro Ile Pro  
165 170 175  
Gly Phe Glu Pro Ala Ser Ala Pro Ala Pro Ser Val Pro Ala Trp Gln  
180 185 190  
Gly Arg Ser Ile Gly Thr Thr Lys Leu Arg Leu Val Glu Phe Ser Ala  
195 200 205  
Phe Leu Glu Gln Gln Arg Asp Pro Asp Ser Tyr Asn Lys His Leu Phe  
210 215 220  
Val His Ile Gly His Ala Asn His Ser Tyr Ser Asp Pro Leu Leu Glu

225	230	235	240
Ser Val Asp Ile Arg Gln Ile Tyr Asp Lys Phe Pro Glu Lys Lys Gly			
245	250		255
Gly Leu Lys Glu Leu Phe Gly Lys Gly Pro Gln Asn Ala Phe Phe Leu			
260	265	270	
Val Lys Phe Trp Ala Asp Leu Asn Cys Asn Ile Gln Asp Asp Ala Gly			
275	280	285	
Ala Phe Tyr Gly Val Thr Ser Gln Tyr Glu Ser Ser Glu Asn Met Thr			
290	295	300	
Val Thr Cys Ser Thr Lys Val Cys Ser Phe Gly Lys Gln Val Val Glu			
305	310	315	320
Lys Val Glu Thr Glu Tyr Ala Arg Phe Glu Asn Gly Arg Phe Val Tyr			
325	330	335	
Arg Ile Asn Arg Ser Pro Met Cys Glu Tyr Met Ile Asn Phe Ile His			
340	345	350	
Lys Leu Lys His Leu Pro Glu Lys Tyr Met Met Asn Ser Val Leu Glu			
355	360	365	
Asn Phe Thr Ile Leu Leu Val Val Thr Asn Arg Asp Thr Gln Glu Thr			
370	375	380	
Leu Leu Cys Met Ala Cys Val Phe Glu Val Ser Asn Ser Glu His Gly			
385	390	395	400
Ala Gln His His Ile Tyr Arg Leu Val Lys Asp			
405	410		
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Met Glu Arg Met Ser Asp Ser Ala Asp Lys Pro Ile Asp Asn Asp Ala			
1	5	10	15
gaa ggg gtc tgg agc ccc gac atc gag caa agc ttt cag gag gcc ctg			96
Glu Gly Val Trp Ser Pro Asp Ile Glu Gln Ser Phe Gln Glu Ala Leu			

20	25	30	
gct atc tat cca cca tgt ggg agg agg aaa atc atc tta tca gac gaa			144
Ala Ile Tyr Pro Pro Cys Gly Arg Arg Lys Ile Ile Leu Ser Asp Glu			
35	40	45	
ggc aaa atg tat ggt agg aat gaa ttg ata gcc aga tac atc aaa ctc			192
Gly Lys Met Tyr Gly Arg Asn Glu Leu Ile Ala Arg Tyr Ile Lys Leu			
50	55	60	
agg aca ggc aag acg agg acc aga aaa cag gtg tct agt cac att cag			240
Arg Thr Gly Lys Thr Arg Thr Arg Lys Gln Val Ser Ser His Ile Gln			
65	70	75	80
gtt ctt gcc aga agg aaa tct cgt gat ttt cat tcc aag cta aag gat			288
Val Leu Ala Arg Arg Lys Ser Arg Asp Phe His Ser Lys Leu Lys Asp			
85	90	95	
cag act gca aag gat aag gcc ctg cag cac atg gcg gcc atg tcc tca			336
Gln Thr Ala Lys Asp Lys Ala Leu Gln His Met Ala Ala Met Ser Ser			
100	105	110	
gcc cag atc gtc tcg gcc act gcc att cat aac aag ctg ggg ctg cct			384
Ala Gln Ile Val Ser Ala Thr Ala Ile His Asn Lys Leu Gly Leu Pro			
115	120	125	
ggg att cca cgc ccg acc ttc cca ggg gcg ccg ggg ttc tgg ccg gga			432
Gly Ile Pro Arg Pro Thr Phe Pro Gly Ala Pro Gly Phe Trp Pro Gly			
130	135	140	
atg att caa aca ggg cag cca gga tcc tca caa gac gtc aag cct ttt			480
Met Ile Gln Thr Gly Gln Pro Gly Ser Ser Gln Asp Val Lys Pro Phe			
145	150	155	160
gtg cag cag gcc tac ccc atc cag cca gcg gtc aca gcc ccc att cca			528
Val Gln Gln Ala Tyr Pro Ile Gln Pro Ala Val Thr Ala Pro Ile Pro			
165	170	175	
ggg ttt gag cct gca tcg gcc cca gct ccc tca gtc cct gcc tgg caa			576
Gly Phe Glu Pro Ala Ser Ala Pro Ala Pro Ser Val Pro Ala Trp Gln			
180	185	190	
ggt cgc tcc att ggc aca acc aag ctt cgc ctg gtg gaa ttt tca gct			624
Gly Arg Ser Ile Gly Thr Thr Lys Leu Arg Leu Val Glu Phe Ser Ala			
195	200	205	
ttt ctc gag cag cga gac cca gac tcg tac aac aaa cac ctc ttc			672
Phe Leu Glu Gln Gln Arg Asp Pro Asp Ser Tyr Asn Lys His Leu Phe			

210	215	220	
gtg cac att ggg cat gcc aac cat tct tac agt gac cca ttg ctt gaa			720
Val His Ile Gly His Ala Asn His Ser Tyr Ser Asp Pro Leu Leu Glu			
225	230	235	240
tca gtg gac att cgt cag att tat gac aaa ttt cct gaa aag aaa ggt			768
Ser Val Asp Ile Arg Gln Ile Tyr Asp Lys Phe Pro Glu Lys Lys Gly			
245	250	255	
ggc tta aag gaa ctg ttt gga aag ggc cct caa aat gcc ttc ttc ctc			816
Gly Leu Lys Glu Leu Phe Gly Lys Gly Pro Gln Asn Ala Phe Phe Leu			
260	265	270	
gta aaa ttc tgg gct gat tta aac tgc aat att caa gat gat gct ggg			864
Val Lys Phe Trp Ala Asp Leu Asn Cys Asn Ile Gln Asp Asp Ala Gly			
275	280	285	
gct ttt tat ggt gta acc agt cag tac gag agt tct gaa aat atg aca			912
Ala Phe Tyr Gly Val Thr Ser Gln Tyr Glu Ser Ser Glu Asn Met Thr			
290	295	300	
gtc acc tgt tcc acc aaa gtt tgc tcc ttt ggg aag caa gta gta gaa			960
Val Thr Cys Ser Thr Lys Val Cys Ser Phe Gly Lys Gln Val Val Glu			
305	310	315	320
aaa gta gag acg gag tat gca agg ttt gag aat ggc cga ttt gta tac			1008
Lys Val Glu Thr Glu Tyr Ala Arg Phe Glu Asn Gly Arg Phe Val Tyr			
325	330	335	
cga ata aac cgc tcc cca atg tgt gaa tat atg atc aac ttc atc cac			1056
Arg Ile Asn Arg Ser Pro Met Cys Glu Tyr Met Ile Asn Phe Ile His			
340	345	350	
aag ctc aaa cac tta cca gag aaa tat atg atg aac agt gtt ttg gaa			1104
Lys Leu Lys His Leu Pro Glu Lys Tyr Met Met Asn Ser Val Leu Glu			
355	360	365	
aac ttc aca att tta ttg gtg gta aca aac agg gat aca caa gaa act			1152
Asn Phe Thr Ile Leu Leu Val Val Thr Asn Arg Asp Thr Gln Glu Thr			
370	375	380	
cta ctc tgc atg gcc tgt gtg ttt gaa gtt tca aat agt gaa cac gga			1200
Leu Leu Cys Met Ala Cys Val Phe Glu Val Ser Asn Ser Glu His Gly			
385	390	395	400
gca caa cat cat att tac agg ctt gta aag gac			1233
Ala Gln His His Ile Tyr Arg Leu Val Lys Asp			

405

410

&lt;210&gt; 27

&lt;211&gt; 427

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 27

Ile	Thr	Ser	Asn	Glu	Trp	Ser	Ser	Pro	Thr	Ser	Pro	Glu	Gly	Ser	Thr
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Ala	Ser	Gly	Gly	Ser	Gln	Ala	Leu	Asp	Lys	Pro	Ile	Asp	Asn	Asp	Ala
						20			25						30
Glu	Gly	Val	Trp	Ser	Pro	Asp	Ile	Glu	Gln	Ser	Phe	Gln	Glu	Ala	Leu
						35			40						45
Ala	Ile	Tyr	Pro	Pro	Cys	Gly	Arg	Arg	Lys	Ile	Ile	Leu	Ser	Asp	Glu
						50			55						60
Gly	Lys	Met	Tyr	Gly	Arg	Asn	Glu	Leu	Ile	Ala	Arg	Tyr	Ile	Lys	Leu
						65			70			75			80
Arg	Thr	Gly	Lys	Thr	Arg	Thr	Arg	Lys	Gln	Val	Ser	Ser	His	Ile	Gln
						85			90						95
Val	Leu	Ala	Arg	Arg	Lys	Ala	Arg	Glu	Ile	Gln	Ala	Lys	Leu	Lys	Asp
						100			105						110
Gln	Ala	Ala	Lys	Asp	Lys	Ala	Leu	Gln	Ser	Met	Ala	Ala	Met	Ser	Ser
						115			120						125
Ala	Gln	Ile	Ile	Ser	Ala	Thr	Ala	Phe	His	Ser	Ser	Met	Ala	Leu	Ala
						130			135						140
Arg	Gly	Pro	Gly	Arg	Pro	Ala	Val	Ser	Gly	Phe	Trp	Gln	Gly	Ala	Leu
						145			150			155			160
Pro	Gly	Gln	Ala	Gly	Thr	Ser	His	Asp	Val	Lys	Pro	Phe	Ser	Gln	Gln
						165			170						175
Thr	Tyr	Ala	Val	Gln	Pro	Pro	Leu	Pro	Leu	Pro	Gly	Phe	Glu	Ser	Pro
						180			185						190
Ala	Gly	Pro	Ala	Pro	Ser	Pro	Ser	Ala	Pro	Pro	Ala	Pro	Pro	Trp	Gln
						195			200						205
Gly	Arg	Ser	Val	Ala	Ser	Ser	Lys	Leu	Trp	Met	Leu	Glu	Phe	Ser	Ala
						210			215						220
Phe	Leu	Glu	Gln	Gln	Gln	Asp	Pro	Asp	Thr	Tyr	Asn	Lys	His	Leu	Phe
						225			230			235			240

Val His Ile Gly Gln Ser Ser Pro Ser Tyr Ser Asp Pro Tyr Leu Glu			
245	250	255	
Ala Val Asp Ile Arg Gln Ile Tyr Asp Lys Phe Pro Glu Lys Lys Gly			
260	265	270	
Gly Leu Lys Asp Leu Phe Glu Arg Gly Pro Ser Asn Ala Phe Phe Leu			
275	280	285	
Val Lys Phe Trp Ala Asp Leu Asn Thr Asn Ile Glu Asp Glu Gly Ser			
290	295	300	
Ser Phe Tyr Gly Val Ser Ser Gln Tyr Glu Ser Pro Glu Asn Met Ile			
305	310	315	320
Ile Thr Cys Ser Thr Lys Val Cys Ser Phe Gly Lys Gln Val Val Glu			
325	330	335	
Lys Val Glu Thr Glu Tyr Ala Arg Tyr Glu Asn Gly His Tyr Ser Tyr			
340	345	350	
Arg Ile His Arg Ser Pro Leu Cys Glu Tyr Met Ile Asn Phe Ile His			
355	360	365	
Lys Leu Lys His Leu Pro Glu Lys Tyr Met Met Asn Ser Val Leu Glu			
370	375	380	
Asn Phe Thr Ile Leu Gln Val Val Thr Asn Arg Asp Thr Gln Glu Thr			
385	390	395	400
Leu Leu Cys Ile Ala Tyr Val Phe Glu Val Ser Ala Ser Glu His Gly			
405	410	415	
Ala Gln His His Ile Tyr Arg Leu Val Lys Glu			
420	425		
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Ile Thr Ser Asn Glu Trp Ser Ser Pro Thr Ser Pro Glu Gly Ser Thr			
1	5	10	15
gcc tct ggg ggc agt cag gca ctg gac aag ccc atc gac aat gac gca	96		

Ala Ser Gly Gly Ser Gln Ala Leu Asp Lys Pro Ile Asp Asn Asp Ala			
20	25	30	
gag ggc gtg tgg agc ccg gat att gag cag agt ttc cag gag gcc ctc			144
Glu Gly Val Trp Ser Pro Asp Ile Glu Gln Ser Phe Gln Glu Ala Leu			
35	40	45	
gcc atc tac ccg ccc tgt ggc agg cgc aaa atc atc ctg tcg gac gag			192
Ala Ile Tyr Pro Pro Cys Gly Arg Arg Lys Ile Ile Leu Ser Asp Glu			
50	55	60	
ggc aag atg tat ggt cgg aac gag ctg att gcc cgc tac atc aag ctc			240
Gly Lys Met Tyr Gly Arg Asn Glu Leu Ile Ala Arg Tyr Ile Lys Leu			
65	70	75	80
cgg aca ggg aag acc cgc acc agg aag cag gtc tcc agc cac atc cag			288
Arg Thr Gly Thr Arg Thr Arg Lys Gln Val Ser Ser His Ile Gln			
85	90	95	
gtg ctg gct cgt cgc aaa gct cgc gag atc cag gcc aag cta aag gac			336
Val Leu Ala Arg Arg Lys Ala Arg Glu Ile Gln Ala Lys Leu Lys Asp			
100	105	110	
cag gca gct aag gac aag gcc ctg cag agc atg gct gcc atg tcg tct			384
Gln Ala Ala Lys Asp Lys Ala Leu Gln Ser Met Ala Ala Met Ser Ser			
115	120	125	
gca cag atc atc tcc gcc acg gcc ttc cac agt agc atg gcc ctc gcc			432
Ala Gln Ile Ile Ser Ala Thr Ala Phe His Ser Ser Met Ala Leu Ala			
130	135	140	
cgg ggc ccc ggc cgc cca gca gtc tca ggg ttt tgg caa gga gct ttg			480
Arg Gly Pro Gly Arg Pro Ala Val Ser Gly Phe Trp Gln Gly Ala Leu			
145	150	155	160
cca ggc caa gcc gga acg tcc cat gat gtg aag cct ttc tct cag caa			528
Pro Gly Gln Ala Gly Thr Ser His Asp Val Lys Pro Phe Ser Gln Gln			
165	170	175	
acc tat gct gtc cag cct ccg ctg cct ctg cca ggg ttt gag tct cct			576
Thr Tyr Ala Val Gln Pro Pro Leu Pro Leu Pro Gly Phe Glu Ser Pro			
180	185	190	
gca ggg ccc gcc cca tcg ccc tct gcg ccc ccg gca ccc cca tgg cag			624
Ala Gly Pro Ala Pro Ser Pro Ser Ala Pro Pro Ala Pro Pro Trp Gln			
195	200	205	
ggc cgc agc gtg gcc agc tcc aag ctc tgg atg ttg gag ttc tct gcc			672

Gly Arg Ser Val Ala Ser Ser Lys Leu Trp Met Leu Glu Phe Ser Ala			
210	215	220	
ttc ctg gag cag cag gac ccg gac acg tac aac aag cac ctg ttc			720
Phe Leu Glu Gln Gln Asp Pro Asp Thr Tyr Asn Lys His Leu Phe			
225	230	235	240
gtg cac att ggc cag tcc agc cca agc tac agc gac ccc tac ctc gaa			768
Val His Ile Gly Gln Ser Ser Pro Ser Tyr Ser Asp Pro Tyr Leu Glu			
245	250	255	
gcc gtg gac atc cgc caa atc tat gac aaa ttc ccg gag aaa aag ggt			816
Ala Val Asp Ile Arg Gln Ile Tyr Asp Lys Phe Pro Glu Lys Lys Gly			
260	265	270	
gga ctc aag gat ctc ttc gaa cgg gga ccc tcc aat gcc ttt ttt ctt			864
Gly Leu Lys Asp Leu Phe Glu Arg Gly Pro Ser Asn Ala Phe Phe Leu			
275	280	285	
gtg aag ttc tgg gca gac ctc aac acc aac atc gag gat gaa ggc agc			912
Val Lys Phe Trp Ala Asp Leu Asn Thr Asn Ile Glu Asp Glu Gly Ser			
290	295	300	
tcc ttc tat ggg gtc tcc agc cag tat gag agc ccc gag aac atg atc			960
Ser Phe Tyr Gly Val Ser Ser Gln Tyr Glu Ser Pro Glu Asn Met Ile			
305	310	315	320
atc acc tgc tcc acg aag gtc tgc tct ttc ggc aag cag gtg gtg gag			1008
Ile Thr Cys Ser Thr Lys Val Cys Ser Phe Gly Lys Gln Val Val Glu			
325	330	335	
aaa gtt gag aca gag tat gct cgc tat gag aat gga cac tac tct tac			1056
Lys Val Glu Thr Glu Tyr Ala Arg Tyr Glu Asn Gly His Tyr Ser Tyr			
340	345	350	
cgc atc cac cgg tcc ccg ctc tgt gag tac atg atc aac ttc atc cac			1104
Arg Ile His Arg Ser Pro Leu Cys Glu Tyr Met Ile Asn Phe Ile His			
355	360	365	
aag ctc aag cac ctc cct gag aag tac atg atg aac agc gtg ctg gag			1152
Lys Leu Lys His Leu Pro Glu Lys Tyr Met Met Asn Ser Val Leu Glu			
370	375	380	
aac ttc acc atc ctg cag gtg gtc acc aac aga gac aca cag gag acc			1200
Asn Phe Thr Ile Leu Gln Val Val Thr Asn Arg Asp Thr Gln Glu Thr			
385	390	395	400
ttg ctg tgc att gcc tat gtc ttt gag gtg tca gcc agt gag cac ggg			1248

Leu Leu Cys Ile Ala Tyr Val Phe Glu Val Ser Ala Ser Glu His Gly  
                  405                     410                     415  
 gct cag cac cac atc tac agg ctg gtg aaa gaa                     1281  
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 Glu Asp Gly Pro Glu Gly Leu Asp Lys Gly Leu Asp Asn Asp Ala Glu  
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 Gly Val Trp Ser Pro Asp Ile Glu Gln Ser Phe Gln Glu Ala Leu Ala  
     35             40                     45  
 Ile Tyr Pro Pro Cys Gly Arg Arg Lys Ile Ile Leu Ser Asp Glu Gly  
     50             55                     60  
 Lys Met Tyr Gly Arg Asn Glu Leu Ile Ala Arg Tyr Ile Lys Leu Arg  
     65             70                     75                     80  
 Thr Gly Lys Thr Arg Thr Arg Lys Gln Val Ser Ser His Ile Gln Val  
     85             90                     95  
 Leu Ala Arg Lys Lys Val Arg Glu Tyr Gln Val Gly Ile Lys Ala Met  
     100            105                     110  
 Asn Leu Asp Gln Val Ser Lys Asp Lys Ala Leu Gln Ser Met Ala Ser  
     115            120                     125  
 Met Ser Ser Ala Gln Ile Val Ser Ala Ser Val Leu Gln Asn Lys Phe  
     130            135                     140  
 Ser Pro Pro Ser Pro Leu Pro Gln Ala Val Phe Ser Thr Ser Arg  
     145            150                     155                     160  
 Phe Trp Ser Ser Pro Pro Leu Leu Gly Gln Gln Pro Gly Pro Ser Gln  
     165            170                     175  
 Asp Ile Lys Pro Phe Ala Gln Pro Ala Tyr Pro Ile Gln Pro Pro Leu  
     180            185                     190  
 Pro Pro Thr Leu Ser Ser Tyr Glu Pro Leu Ala Pro Leu Pro Ser Ala  
     195            200                     205

Ala Ala Ser Val Pro Val Trp Gln Asp Arg Thr Ile Ala Ser Ser Arg  
210 215 220  
Leu Arg Leu Leu Glu Tyr Ser Ala Phe Met Glu Val Gln Arg Asp Pro  
225 230 235 240  
Asp Thr Tyr Ser Lys His Leu Phe Val His Ile Gly Gln Thr Asn Pro  
245 250 255  
Ala Phe Ser Asp Pro Pro Leu Glu Ala Val Asp Val Arg Gln Ile Tyr  
260 265 270  
Asp Lys Phe Pro Glu Lys Lys Gly Gly Leu Lys Glu Leu Tyr Glu Lys  
275 280 285  
Gly Pro Pro Asn Ala Phe Phe Leu Val Lys Phe Trp Ala Asp Leu Asn  
290 295 300  
Ser Thr Ile Gln Glu Gly Pro Gly Ala Phe Tyr Gly Val Ser Ser Gln  
305 310 315 320  
Tyr Ser Ser Ala Asp Ser Met Thr Ile Ser Val Ser Thr Lys Val Cys  
325 330 335  
Ser Phe Gly Lys Gln Val Val Glu Lys Val Glu Thr Glu Tyr Ala Arg  
340 345 350  
Leu Glu Asn Gly Arg Phe Val Tyr Arg Ile His Arg Ser Pro Met Cys  
355 360 365  
Glu Tyr Met Ile Asn Phe Ile His Lys Leu Lys His Leu Pro Glu Lys  
370 375 380  
Tyr Met Met Asn Ser Val Leu Glu Asn Phe Thr Ile Leu Gln Val Val  
385 390 395 400  
Thr Ser Arg Asp Ser Gln Glu Thr Leu Leu Val Ile Ala Phe Val Phe  
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1							5			10				15		
gag	gat	ggg	ccc	gag	ggc	ctg	gac	aag	ggg	ctg	gac	aac	gat	gcg	gag	96
Glu	Asp	Gly	Pro	Glu	Gly	Leu	Asp	Lys	Gly	Leu	Asp	Asn	Asp	Ala	Glu	
						20				25				30		
ggc	gtg	tgg	agc	cgg	gac	atc	gag	cag	agc	ttc	cag	gag	gcc	ctg	gcc	144
Gly	Val	Trp	Ser	Pro	Asp	Ile	Glu	Gln	Ser	Phe	Gln	Glu	Ala	Leu	Ala	
						35			40				45			
atc	tac	ccg	ccc	tgc	ggc	cgg	aag	atc	atc	ctg	tca	gac	gag	ggc	192	
Ile	Tyr	Pro	Pro	Cys	Gly	Arg	Arg	Lys	Ile	Ile	Leu	Ser	Asp	Glu	Gly	
						50			55			60				
aag	atg	tac	ggc	cga	aat	gag	ttg	att	gca	cgc	tat	att	aaa	ctg	agg	240
Lys	Met	Tyr	Gly	Arg	Asn	Glu	Leu	Ile	Ala	Arg	Tyr	Ile	Lys	Leu	Arg	
						65			70			75			80	
acg	ggg	aag	act	cgg	acg	aga	aaa	cag	gtg	tcc	agc	cac	ata	cag	gtt	288
Thr	Gly	Lys	Thr	Arg	Thr	Arg	Lys	Gln	Val	Ser	Ser	His	Ile	Gln	Val	
						85			90			95				
cta	gct	cgg	aag	aag	gtg	cgg	gag	tac	cag	gtt	ggc	atc	aag	gcc	atg	336
Leu	Ala	Arg	Lys	Lys	Val	Arg	Glu	Tyr	Gln	Val	Gly	Ile	Lys	Ala	Met	
						100			105			110				
aac	ctg	gac	cag	gtc	tcc	aag	gac	aaa	gcc	ctt	cag	agc	atg	gcg	tcc	384
Asn	Leu	Asp	Gln	Val	Ser	Lys	Asp	Lys	Ala	Leu	Gln	Ser	Met	Ala	Ser	
						115			120			125				
atg	tcc	tct	gcc	cag	atc	gtc	tct	gcc	agt	gtc	ctg	cag	aac	aag	ttc	432
Met	Ser	Ser	Ala	Gln	Ile	Val	Ser	Ala	Ser	Val	Leu	Gln	Asn	Lys	Phe	
						130			135			140				
agc	cca	cct	tcc	cct	ctg	ccc	cag	gcc	gtc	ttc	tcc	act	tcc	tcg	cgg	480
Ser	Pro	Pro	Ser	Pro	Leu	Pro	Gln	Ala	Val	Phe	Ser	Thr	Ser	Ser	Arg	
						145			150			155			160	
ttc	tgg	agc	agc	ccc	cct	ctc	ctg	gga	cag	cag	cct	gga	ccc	tct	cag	528
Phe	Trp	Ser	Ser	Pro	Pro	Leu	Leu	Gly	Gln	Gln	Pro	Gly	Pro	Ser	Gln	
						165			170			175				
gac	atc	aag	ccc	ttt	gca	cag	cca	gcc	tac	ccc	atc	cag	ccg	ccc	ctg	576
Asp	Ile	Lys	Pro	Phe	Ala	Gln	Pro	Ala	Tyr	Pro	Ile	Gln	Pro	Pro	Leu	

180	185	190	
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Pro Pro Thr Leu Ser Ser Tyr Glu Pro Leu Ala Pro Leu Pro Ser Ala			
195	200	205	
gct gcc tct gtg cct gtg tgg cag gac cgt acc att gcc tcc tcc cg			672
Ala Ala Ser Val Pro Val Trp Gln Asp Arg Thr Ile Ala Ser Ser Arg			
210	215	220	
ctg cgg ctc ctg gag tat tca gcc ttc atg gag gtg cag cga gac cct			720
Leu Arg Leu Leu Glu Tyr Ser Ala Phe Met Glu Val Gln Arg Asp Pro			
225	230	235	240
gac acg tac agc aaa cac ctg ttt gtg cac atc ggc cag acg aac ccc			768
Asp Thr Tyr Ser Lys His Leu Phe Val His Ile Gly Gln Thr Asn Pro			
245	250	255	
gcc ttc tca gac cca ccc ctg gag gca gta gat gtg cgc cag atc tat			816
Ala Phe Ser Asp Pro Pro Leu Glu Ala Val Asp Val Arg Gln Ile Tyr			
260	265	270	
gac aaa ttc ccc gag aaa aag gga gga ttg aag gag ctc tat gag aag			864
Asp Lys Phe Pro Glu Lys Lys Gly Gly Leu Lys Glu Leu Tyr Glu Lys			
275	280	285	
ggg ccc cct aat gcc ttc ttc ctt gtc aag ttc tgg gcc gac ctc aac			912
Gly Pro Pro Asn Ala Phe Phe Leu Val Lys Phe Trp Ala Asp Leu Asn			
290	295	300	
agc acc atc cag gag ggc ccg gga gcc ttc tat ggg gtc agc tct cag			960
Ser Thr Ile Gln Glu Gly Pro Gly Ala Phe Tyr Gly Val Ser Ser Gln			
305	310	315	320
tac agc tct gct gat agc atg acc atc agc gtc tcc acc aag gtg tgc			1008
Tyr Ser Ser Ala Asp Ser Met Thr Ile Ser Val Ser Thr Lys Val Cys			
325	330	335	
tcc ttt ggc aaa cag gtg gta gag aag gtg gag act gag tat gcc agg			1056
Ser Phe Gly Lys Gln Val Val Glu Lys Val Glu Thr Glu Tyr Ala Arg			
340	345	350	
ctg gag aac ggg cgc ttt gtg tac cgt atc cac cgc tcg ccc atg tgc			1104
Leu Glu Asn Gly Arg Phe Val Tyr Arg Ile His Arg Ser Pro Met Cys			
355	360	365	
gag tac atg atc aac ttc atc cac aag ctg aag cac ctg ccc gag aag			1152
Glu Tyr Met Ile Asn Phe Ile His Lys Leu Lys His Leu Pro Glu Lys			

370	375	380	
tac atg atg aac agc gtg ctg gag aac ttc acc atc ctg cag gtg gtc			
Tyr Met Met Asn Ser Val Leu Glu Asn Phe Thr Ile Leu Gln Val Val			
385	390	395	1200
acg agc cgg gac tcc cag gag acc ttg ctt gtc att gct ttt gtc ttc			
Thr Ser Arg Asp Ser Gln Glu Thr Leu Leu Val Ile Ala Phe Val Phe			
405	410	415	
gaa gtc tcc acc agt gag cac ggg gcc cag cac cat gtc tac aag ctc			
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Val Lys Asp			
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His Tyr Arg Glu Val Leu Pro Leu Ala Thr Phe Val Arg Arg Leu Gly			
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Pro Gln Gly Trp Arg Leu Val Gln Arg Gly Asp Pro Ala Ala Phe Arg			
35	40	45	
Ala Leu Val Ala Gln Cys Leu Val Cys Val Pro Trp Asp Ala Arg Pro			
50	55	60	
Pro Pro Ala Ala Pro Ser Phe Arg Gln Val Ser Cys Leu Lys Glu Leu			
65	70	75	80
Val Ala Arg Val Leu Gln Arg Leu Cys Glu Arg Gly Ala Lys Asn Val			
85	90	95	
Leu Ala Phe Gly Phe Ala Leu Leu Asp Gly Ala Arg Gly Gly Pro Pro			
100	105	110	
Glu Ala Phe Thr Thr Ser Val Arg Ser Tyr Leu Pro Asn Thr Val Thr			
115	120	125	
Asp Ala Leu Arg Gly Ser Gly Ala Trp Gly Leu Leu Leu Arg Arg Val			
130	135	140	

Gly Asp Asp Val Leu Val His Leu Leu Ala Arg Cys Ala Leu Phe Val  
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Leu Val Ala Pro Ser Cys Ala Tyr Gln Val Cys Gly Pro Pro Leu Tyr  
165 170 175  
Gln Leu Gly Ala Ala Thr Gln Ala Arg Pro Pro Pro His Ala Ser Gly  
180 185 190  
Pro Arg Arg Arg Leu Gly Cys Glu Arg Ala Trp Asn His Ser Val Arg  
195 200 205  
Glu Ala Gly Val Pro Leu Gly Leu Pro Ala Pro Gly Ala Arg Arg Arg  
210 215 220  
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225 230 235 240  
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245 250 255  
Ala His Pro Gly Arg Thr Arg Gly Pro Ser Asp Arg Gly Phe Cys Val  
260 265 270  
Val Ser Pro Ala Arg Pro Ala Glu Glu Ala Thr Ser Leu Glu Gly Ala  
275 280 285  
Leu Ser Gly Thr Arg His Ser His Pro Ser Val Gly Arg Gln His His  
290 295 300  
Ala Gly Pro Pro Ser Thr Ser Arg Pro Pro Arg Pro Trp Asp Thr Pro  
305 310 315 320  
Cys Pro Pro Val Tyr Ala Glu Thr Lys His Phe Leu Tyr Ser Ser Gly  
325 330 335  
Asp Lys Glu Gln Leu Arg Pro Ser Phe Leu Leu Ser Ser Leu Arg Pro  
340 345 350  
Ser Leu Thr Gly Ala Arg Arg Leu Val Glu Thr Ile Phe Leu Gly Ser  
355 360 365  
Arg Pro Trp Met Pro Gly Thr Pro Arg Arg Leu Pro Arg Leu Pro Gln  
370 375 380  
Arg Tyr Trp Gln Met Arg Pro Leu Phe Leu Glu Leu Gly Asn His  
385 390 395 400  
Ala Gln Cys Pro Tyr Gly Val Leu Leu Lys Thr His Cys Pro Leu Arg  
405 410 415  
Ala Ala Val Thr Pro Ala Ala Gly Val Cys Ala Arg Glu Lys Pro Gln  
420 425 430

Gly Ser Val Ala Ala Pro Glu Glu Glu Asp Thr Asp Pro Arg Arg Leu  
435 440 445  
Val Gln Leu Leu Arg Gln His Ser Ser Pro Trp Gln Val Tyr Gly Phe  
450 455 460  
Val Arg Ala Cys Leu Arg Arg Leu Val Pro Pro Gly Leu Trp Gly Ser  
465 470 475 480  
Arg His Asn Glu Arg Arg Phe Leu Arg Asn Thr Lys Lys Phe Ile Ser  
485 490 495  
Leu Gly Lys His Ala Lys Leu Ser Leu Gln Glu Leu Thr Trp Lys Met  
500 505 510  
Ser Val Arg Asp Cys Ala Trp Leu Arg Arg Ser Pro Gly Val Gly Cys  
515 520 525  
Val Pro Ala Ala Glu His Arg Leu Arg Glu Glu Ile Leu Ala Lys Phe  
530 535 540  
Leu His Trp Leu Met Ser Val Tyr Val Val Glu Leu Leu Arg Ser Phe  
545 550 555 560  
Phe Tyr Val Thr Glu Thr Phe Gln Lys Asn Arg Leu Phe Phe Tyr  
565 570 575  
Arg Lys Ser Val Trp Ser Lys Leu Gln Ser Ile Gly Ile Arg Gln His  
580 585 590  
Leu Lys Arg Val Gln Leu Arg Glu Leu Ser Glu Ala Glu Val Arg Gln  
595 600 605  
His Arg Glu Ala Arg Pro Ala Leu Leu Thr Ser Arg Leu Arg Phe Ile  
610 615 620  
Pro Lys Pro Asp Gly Leu Arg Pro Ile Val Asn Met Asp Tyr Val Val  
625 630 635 640  
Gly Ala Arg Thr Phe Arg Arg Glu Lys Arg Ala Glu Arg Leu Thr Ser  
645 650 655  
Arg Val Lys Ala Leu Phe Ser Val Leu Asn Tyr Glu Arg Ala Arg Arg  
660 665 670  
Pro Gly Leu Leu Gly Ala Ser Val Leu Gly Leu Asp Asp Ile His Arg  
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Ala Trp Arg Thr Phe Val Leu Arg Val Arg Ala Gln Asp Pro Pro Pro  
690 695 700  
Glu Leu Tyr Phe Val Lys Val Asp Val Thr Gly Ala Tyr Asp Thr Ile  
705 710 715 720

Pro Gln Asp Arg Leu Thr Glu Val Ile Ala Ser Ile Ile Lys Pro Gln  
725 730 735  
Asn Thr Tyr Cys Val Arg Arg Tyr Ala Val Val Gln Lys Ala Ala His  
740 745 750  
Gly His Val Arg Lys Ala Phe Lys Ser His Val Ser Thr Leu Thr Asp  
755 760 765  
Leu Gln Pro Tyr Met Arg Gln Phe Val Ala His Leu Gln Glu Thr Ser  
770 775 780  
Pro Leu Arg Asp Ala Val Val Ile Glu Gln Ser Ser Ser Leu Asn Glu  
785 790 795 800  
Ala Ser Ser Gly Leu Phe Asp Val Phe Leu Arg Phe Met Cys His His  
805 810 815  
Ala Val Arg Ile Arg Gly Lys Ser Tyr Val Gln Cys Gln Gly Ile Pro  
820 825 830  
Gln Gly Ser Ile Leu Ser Thr Leu Leu Cys Ser Leu Cys Tyr Gly Asp  
835 840 845  
Met Glu Asn Lys Leu Phe Ala Gly Ile Arg Arg Asp Gly Leu Leu Leu  
850 855 860  
Arg Leu Val Asp Asp Phe Leu Leu Val Thr Pro His Leu Thr His Ala  
865 870 875 880  
Lys Thr Phe Leu Arg Thr Leu Val Arg Gly Val Pro Glu Tyr Gly Cys  
885 890 895  
Val Val Asn Leu Arg Lys Thr Val Val Asn Phe Pro Val Glu Asp Glu  
900 905 910  
Ala Leu Gly Gly Thr Ala Phe Val Gln Met Pro Ala His Gly Leu Phe  
915 920 925  
Pro Trp Cys Gly Leu Leu Leu Asp Thr Arg Thr Leu Glu Val Gln Ser  
930 935 940  
Asp Tyr Ser Ser Tyr Ala Arg Thr Ser Ile Arg Ala Ser Leu Thr Phe  
945 950 955 960  
Asn Arg Gly Phe Lys Ala Gly Arg Asn Met Arg Arg Lys Leu Phe Gly  
965 970 975  
Val Leu Arg Leu Lys Cys His Ser Leu Phe Leu Asp Leu Gln Val Asn  
980 985 990  
Ser Leu Gln Thr Val Cys Thr Asn Ile Tyr Lys Ile Leu Leu Gln  
995 1000 1005

Ala Tyr Arg Phe His Ala Cys Val Leu Gln Leu Pro Phe His Gln Gln  
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 Val Trp Lys Asn Pro Thr Phe Phe Leu Arg Val Ile Ser Asp Thr Ala  
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 Ser Leu Cys Tyr Ser Ile Leu Lys Ala Lys Asn Ala Gly Met Ser Leu  
                                1045                       1050                       1055  
 Gly Ala Lys Gly Ala Ala Gly Pro Leu Pro Ser Glu Ala Val Gln Trp  
                                1060                       1065                       1070  
 Leu Cys His Gln Ala Phe Leu Leu Lys Leu Thr Arg His Arg Val Thr  
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 Tyr Val Pro Leu Leu Gly Ser Leu Arg Thr Ala Gln Thr Gln Leu Ser  
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 Arg Lys Leu Pro Gly Thr Thr Leu Thr Ala Leu Glu Ala Ala Asn  
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cac	tac	cgc	gag	gtg	ctg	ccg	ctg	gcc	acg	ttc	gtg	cgg	cgc	ctg	ggg	96
His	Tyr	Arg	Glu	Val	Leu	Pro	Leu	Ala	Thr	Phe	Val	Arg	Arg	Leu	Gly	
20									25					30		
ccc	cag	ggc	tgg	cg	ctg	gtg	cag	cgc	ggg	gac	ccg	gcg	gct	ttc	cgc	144
Pro	Gln	Gly	Trp	Arg	Leu	Val	Gln	Arg	Gly	Asp	Pro	Ala	Ala	Phe	Arg	
35									40					45		
gcg	ctg	gtg	gcc	cag	tgc	ctg	gtg	ttc	ccc	tgg	gac	gca	cgg	cgc	192	
Ala	Leu	Val	Ala	Gln	Cys	Leu	Val	Cys	Val	Pro	Trp	Asp	Ala	Arg	Pro	
50									55					60		

ccc ccc gcc ccc tcc ttc cgc cag gtg tcc tgc ctg aag gag ctg	240
Pro Pro Ala Ala Pro Ser Phe Arg Gln Val Ser Cys Leu Lys Glu Leu	
65 70 75 80	
gtg gcc cga gtg ctg cag agg ctg tgc gag cgc ggc gcg aag aac gtg	288
Val Ala Arg Val Leu Gln Arg Leu Cys Glu Arg Gly Ala Lys Asn Val	
85 90 95	
ctg gcc ttc ggc ttc gcg ctg ctg gac ggg gcc cgc ggg ggc ccc ccc	336
Leu Ala Phe Gly Phe Ala Leu Leu Asp Gly Ala Arg Gly Gly Pro Pro	
100 105 110	
gag gcc ttc acc acc agc gtg cgc agc tac ctg ccc aac acg gtg acc	384
Glu Ala Phe Thr Thr Ser Val Arg Ser Tyr Leu Pro Asn Thr Val Thr	
115 120 125	
gac gca ctg cgg ggg agc ggg gcg tgg ggg ctg ctg cgc cgc gtg	432
Asp Ala Leu Arg Gly Ser Gly Ala Trp Gly Leu Leu Arg Arg Val	
130 135 140	
ggc gac gac gtg ctg gtt cac ctg ctg gca cgc tgc gcg ctc ttt gtg	480
Gly Asp Asp Val Leu Val His Leu Leu Ala Arg Cys Ala Leu Phe Val	
145 150 155 160	
ctg gtg gct ccc agc tgc gcc tac cag gtg tgc ggg ccg ccg ctg tac	528
Leu Val Ala Pro Ser Cys Ala Tyr Gln Val Cys Gly Pro Pro Leu Tyr	
165 170 175	
cag ctc ggc gct gcc act cag gcc cgg ccc ccg cca cac gct agt gga	576
Gln Leu Gly Ala Ala Thr Gln Ala Arg Pro Pro His Ala Ser Gly	
180 185 190	
ccc cga agg cgt ctg gga tgc gaa cgg gcc tgg aac cat agc gtc agg	624
Pro Arg Arg Arg Leu Gly Cys Glu Arg Ala Trp Asn His Ser Val Arg	
195 200 205	
gag gcc ggg gtc ccc ctg ggc ctg cca gcc ccg ggt gcg agg agg cgc	672
Glu Ala Gly Val Pro Leu Gly Leu Pro Ala Pro Gly Ala Arg Arg Arg	
210 215 220	
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Gly Gly Ser Ala Ser Arg Ser Leu Pro Leu Pro Lys Arg Pro Arg Arg	
225 230 235 240	
ggc gct gcc cct gag cgg gag cgg acg ccc gtt ggg cag ggg tcc tgg	768
Gly Ala Ala Pro Glu Pro Glu Arg Thr Pro Val Gly Gln Gly Ser Trp	
245 250 255	

gcc cac ccg ggc agg acg cgt gga ccg agt gac cgt ggt ttc tgt gtg			816
Ala His Pro Gly Arg Thr Arg Gly Pro Ser Asp Arg Gly Phe Cys Val			
260	265	270	
gtg tca cct gcc aga ccc gcc gaa gaa gcc acc tct ttg gag ggt gcg			864
Val Ser Pro Ala Arg Pro Ala Glu Glu Ala Thr Ser Leu Glu Gly Ala			
275	280	285	
ctc tct ggc acg cgc cac tcc cac cca tcc gtg ggc cgc cag cac cac			912
Leu Ser Gly Thr Arg His Ser His Pro Ser Val Gly Arg Gln His His			
290	295	300	
gcg ggc ccc cca tcc aca tcg cgg cca cca cgt ccc tgg gac acg cct			960
Ala Gly Pro Pro Ser Thr Ser Arg Pro Pro Arg Pro Trp Asp Thr Pro			
305	310	315	320
tgt ccc ceg gtg tac gcc gag acc aag cac ttc ctc tac tcc tca ggc			1008
Cys Pro Pro Val Tyr Ala Glu Thr Lys His Phe Leu Tyr Ser Ser Gly			
325	330	335	
gac aag gag cag ctg cgg ccc tcc ttc cta ctc agc tct ctg agg ccc			1056
Asp Lys Glu Gln Leu Arg Pro Ser Phe Leu Leu Ser Ser Leu Arg Pro			
340	345	350	
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Ser Leu Thr Gly Ala Arg Arg Leu Val Glu Thr Ile Phe Leu Gly Ser			
355	360	365	
agg ccc tgg atg cca ggg act ccc cgc agg ttg ccc cgc ctg ccc cag			1152
Arg Pro Trp Met Pro Gly Thr Pro Arg Arg Leu Pro Arg Leu Pro Gln			
370	375	380	
cgc tac tgg caa atg cgg ccc ctg ttt ctg gag ctg ctt ggg aac cac			1200
Arg Tyr Trp Gln Met Arg Pro Leu Phe Leu Glu Leu Leu Gly Asn His			
385	390	395	400
gcg cag tgc ccc tac ggg gtg ctc ctc aag acg cac tgc ccg ctg cga			1248
Ala Gln Cys Pro Tyr Gly Val Leu Leu Lys Thr His Cys Pro Leu Arg			
405	410	415	
gct gcg gtc acc cca gca gcc ggt gtc tgt gcc cgg gag aag ccc cag			1296
Ala Ala Val Thr Pro Ala Ala Gly Val Cys Ala Arg Glu Lys Pro Gln			
420	425	430	
ggc tct gtg gcg gcc ccc gag gag gag gac aca gac ccc cgt cgc ctg			1344
Gly Ser Val Ala Ala Pro Glu Glu Glu Asp Thr Asp Pro Arg Arg Leu			
435	440	445	

gtg cag ctg ctc cgc cag cac agc agc ccc tgg cag gtg tac ggc ttc			1392
Val Gln Leu Leu Arg Gln His Ser Ser Pro Trp Gln Val Tyr Gly Phe			
450	455	460	
gtg cgg gcc tgc ctg cgc cgg ctg gtg ccc cca ggc ctc tgg ggc tcc			1440
Val Arg Ala Cys Leu Arg Arg Leu Val Pro Pro Gly Leu Trp Gly Ser			
465	470	475	480
agg cac aac gaa cgc cgc ttc ctc agg aac acc aag aag ttc atc tcc			1488
Arg His Asn Glu Arg Arg Phe Leu Arg Asn Thr Lys Lys Phe Ile Ser			
485	490	495	
ctg ggg aag cat gcc aag ctc tcg ctg cag gag ctg acg tgg aag atg			1536
Leu Gly Lys His Ala Lys Leu Ser Leu Gln Glu Leu Thr Trp Lys Met			
500	505	510	
agc gtg cgg gac tgc gct tgg ctg cgc agg agc cca ggg gtt ggc tgt			1584
Ser Val Arg Asp Cys Ala Trp Leu Arg Arg Ser Pro Gly Val Gly Cys			
515	520	525	
gtt ccg gcc gca gag cac cgt ctg cgt gag gag atc ctg gcc aag ttc			1632
Val Pro Ala Ala Glu His Arg Leu Arg Glu Glu Ile Leu Ala Lys Phe			
530	535	540	
ctg cac tgg ctg atg agt gtg tac gtc gtc gag ctg ctc agg tct ttc			1680
Leu His Trp Leu Met Ser Val Tyr Val Val Glu Leu Leu Arg Ser Phe			
545	550	555	560
ttt tat gtc acg gag acc acg ttt caa aag aac agg ctc ttt ttc tac			1728
Phe Tyr Val Thr Glu Thr Phe Gln Lys Asn Arg Leu Phe Phe Tyr			
565	570	575	
cgg aag agt gtc tgg agc aag ttg caa agc att gga atc aga cag cac			1776
Arg Lys Ser Val Trp Ser Lys Leu Gln Ser Ile Gly Ile Arg Gln His			
580	585	590	
ttg aag agg gtg cag ctg cgg gag ctg tcg gaa gca gag gtc agg cag			1824
Leu Lys Arg Val Gln Leu Arg Glu Leu Ser Glu Ala Glu Val Arg Gln			
595	600	605	
cat cgg gaa gcc agg ccc gcc ctg ctg acg tcc aga ctc cgc ttc atc			1872
His Arg Glu Ala Arg Pro Ala Leu Leu Thr Ser Arg Leu Arg Phe Ile			
610	615	620	
ccc aag cct gac ggg ctg cgg ccg att gtg aac atg gac tac gtc gtg			1920
Pro Lys Pro Asp Gly Leu Arg Pro Ile Val Asn Met Asp Tyr Val Val			
625	630	635	640

gga gcc aga acg ttc cgc aga gaa aag agg gcc gag cgt ctc acc tcg			1968
Gly Ala Arg Thr Phe Arg Arg Glu Lys Arg Ala Glu Arg Leu Thr Ser			
645	650	655	
agg gtg aag gca ctg ttc agc gtg ctc aac tac gag cgg gcg cgg cgc			2016
Arg Val Lys Ala Leu Phe Ser Val Leu Asn Tyr Glu Arg Ala Arg Arg			
660	665	670	
ccc ggc ctc ctg ggc gcc tct gtg ctg ggc ctg gac gat atc cac agg			2064
Pro Gly Leu Leu Gly Ala Ser Val Leu Gly Leu Asp Asp Ile His Arg			
675	680	685	
gcc tgg cgc acc ttc gtg ctg cgt gtg cgg gcc cag gac ccg ccg cct			2112
Ala Trp Arg Thr Phe Val Leu Arg Val Arg Ala Gln Asp Pro Pro Pro			
690	695	700	
gag ctg tac ttt gtc aag gtg gat gtg acg ggc gcg tac gac acc atc			2160
Glu Leu Tyr Phe Val Lys Val Asp Val Thr Gly Ala Tyr Asp Thr Ile			
705	710	715	720
ccc cag gac agg ctc acg gag gtc atc gcc agc atc atc aaa ccc cag			2208
Pro Gln Asp Arg Leu Thr Glu Val Ile Ala Ser Ile Ile Lys Pro Gln			
725	730	735	
aac acg tac tgc gtg cgt cgg tat gcc gtg gtc cag aag gcc gcc cat			2256
Asn Thr Tyr Cys Val Arg Arg Tyr Ala Val Val Gln Lys Ala Ala His			
740	745	750	
ggg cac gtc cgc aag gcc ttc aag agc cac gtc tct acc ttg aca gac			2304
Gly His Val Arg Lys Ala Phe Lys Ser His Val Ser Thr Leu Thr Asp			
755	760	765	
ctc cag ccg tac atg cga cag ttc gtg gct cac ctg cag gag acc agc			2352
Leu Gln Pro Tyr Met Arg Gln Phe Val Ala His Leu Gln Glu Thr Ser			
770	775	780	
ccg ctg agg gat gcc gtc gtc atc gag cag agc tcc tcc ctg aat gag			2400
Pro Leu Arg Asp Ala Val Val Ile Glu Gln Ser Ser Leu Asn Glu			
785	790	795	800
gcc agc agt ggc ctc ttc gac gtc ttc cta cgc ttc atg tgc cac cac			2448
Ala Ser Ser Gly Leu Phe Asp Val Phe Leu Arg Phe Met Cys His His			
805	810	815	
gcc gtg cgc atc agg ggc aag tcc tac gtc cag tgc cag ggg atc ccg			2496
Ala Val Arg Ile Arg Gly Lys Ser Tyr Val Gln Cys Gln Gly Ile Pro			
820	825	830	

cag	ggc	tcc	atc	ctc	tcc	acg	ctg	ctc	tgc	agc	ctg	tgc	tac	ggc	gac	2544
Gln	Gly	Ser	Ile	Leu	Ser	Thr	Leu	Leu	Cys	Ser	Leu	Cys	Tyr	Gly	Asp	
835							840						845			
atg	gag	aac	aag	ctg	ttt	gcg	ggg	att	cgg	cgg	gac	ggg	ctg	ctc	ctg	2592
Met	Glu	Asn	Lys	Leu	Phe	Ala	Gly	Ile	Arg	Arg	Asp	Gly	Leu	Leu	Leu	
850							855						860			
cgt	ttg	gtg	gat	gat	ttc	ttg	ttg	gtg	aca	cct	cac	ctc	acc	cac	gcg	2640
Arg	Leu	Val	Asp	Asp	Phe	Leu	Leu	Val	Thr	Pro	His	Leu	Thr	His	Ala	
865							870				875			880		
aaa	acc	ttc	ctc	agg	acc	ctg	gtc	cga	ggt	gtc	cct	gag	tat	ggc	tgc	2688
Lys	Thr	Phe	Leu	Arg	Thr	Leu	Val	Arg	Gly	Val	Pro	Glu	Tyr	Gly	Cys	
							885				890			895		
gtg	gtg	aac	ttg	cgg	aag	aca	gtg	gtg	aac	ttc	cct	gta	gaa	gac	gag	2736
Val	Val	Asn	Leu	Arg	Lys	Thr	Val	Val	Asn	Phe	Pro	Val	Glu	Asp	Glu	
900							905						910			
gcc	ctg	ggt	ggc	acg	gct	ttt	gtt	cag	atg	ccg	gcc	cac	ggc	cta	ttc	2784
Ala	Leu	Gly	Gly	Thr	Ala	Phe	Val	Gln	Met	Pro	Ala	His	Gly	Leu	Phe	
915							920						925			
ccc	tgg	tgc	ggc	ctg	ctg	gat	acc	cgg	acc	ctg	gag	gtg	cag	agc		2832
Pro	Trp	Cys	Gly	Leu	Leu	Leu	Asp	Thr	Arg	Thr	Leu	Glu	Val	Gln	Ser	
930							935						940			
gac	tac	tcc	agc	tat	gcc	cgg	acc	tcc	atc	aga	gcc	agt	ctc	acc	ttc	2880
Asp	Tyr	Ser	Ser	Tyr	Ala	Arg	Thr	Ser	Ile	Arg	Ala	Ser	Leu	Thr	Phe	
945							950				955			960		
aac	cgc	ggc	ttc	aag	gct	ggg	agg	aac	atg	cgt	cgc	aaa	ctc	ttt	ggg	2928
Asn	Arg	Gly	Phe	Lys	Ala	Gly	Arg	Asn	Met	Arg	Arg	Lys	Leu	Phe	Gly	
							965				970			975		
gtc	ttg	cgg	ctg	aag	tgt	cac	agc	ctg	ttt	ctg	gat	ttg	cag	gtg	aac	2976
Val	Leu	Arg	Leu	Lys	Cys	His	Ser	Leu	Phe	Leu	Asp	Leu	Gln	Val	Asn	
980							985						990			
agc	ctc	cag	acg	gtg	tgc	acc	aac	atc	tac	aag	atc	ctc	ctg	ctg	cag	3024
Ser	Leu	Gln	Thr	Val	Cys	Thr	Asn	Ile	Tyr	Lys	Ile	Leu	Leu	Gln		
995							1000						1005			
gcg	tac	agg	ttt	cac	gca	tgt	gtg	ctg	cag	ctc	cca	ttt	cat	cag	caa	3072
Ala	Tyr	Arg	Phe	His	Ala	Cys	Val	Leu	Gln	Leu	Pro	Phe	His	Gln	Gln	
1010							1015						1020			

gtt tgg aag aac ccc aca ttt ttc ctg cgc gtc atc tct gac acg gcc			3120
Val Trp Lys Asn Pro Thr Phe Phe Leu Arg Val Ile Ser Asp Thr Ala			
1025	1030	1035	1040
tcc ctc tgc tac tcc atc ctg aaa gcc aag aac gca ggg atg tcg ctg			3168
Ser Leu Cys Tyr Ser Ile Leu Lys Ala Lys Asn Ala Gly Met Ser Leu			
1045	1050	1055	
ggg gcc aag ggc gcc ggc cct ctg ccc tcc gag gcc gtg cag tgg			3216
Gly Ala Lys Gly Ala Ala Gly Pro Leu Pro Ser Glu Ala Val Gln Trp			
1060	1065	1070	
ctg tgc cac caa gca ttc ctg ctc aag ctg act cga cac cgt gtc acc			3264
Leu Cys His Gln Ala Phe Leu Leu Lys Leu Thr Arg His Arg Val Thr			
1075	1080	1085	
tac gtg cca ctc ctg ggg tca ctc agg aca gcc cag acg cag ctg agt			3312
Tyr Val Pro Leu Leu Gly Ser Leu Arg Thr Ala Gln Thr Gln Leu Ser			
1090	1095	1100	
cgg aag ctc ccg ggg acg acg ctg act gcc ctg gag gcc gca gcc aac			3360
Arg Lys Leu Pro Gly Thr Thr Leu Thr Ala Leu Glu Ala Ala Asn			
1105	1110	1115	1120
ccg gca ctg ccc tca gac ttc aag acc atc ctg gac			3396
Pro Ala Leu Pro Ser Asp Phe Lys Thr Ile Leu Asp			
1125	1130		

<210> 33

<211> 21

<212> DNA

### <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: artificially synthesized primer sequence

<400> 33

ttggcttcca ggccataatt g

21

<210> 34

<211> 20

<212> DNA

### <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: artificially synthesized primer sequence  
<400> 34  
aagagggcag atctatcgga 20  
<210> 35  
<211> 20  
<212> DNA  
<213> Artificial Sequence  
<220>  
<223> Description of Artificial Sequence: artificially synthesized primer sequence  
<400> 35  
atggatctcc tgaagggtgct 20  
<210> 36  
<211> 20  
<212> DNA  
<213> Artificial Sequence  
<220>  
<223> Description of Artificial Sequence: artificially synthesized primer sequence  
<400> 36  
aagagggcag atctatcgga 20  
<210> 37  
<211> 23  
<212> DNA  
<213> Artificial Sequence  
<220>  
<223> Description of Artificial Sequence: artificially synthesized primer sequence  
<400> 37  
ggaagagtga gcggccatca agg 23  
<210> 38  
<211> 22  
<212> DNA  
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<223> Description of Artificial Sequence: artificially synthesized primer sequence  
<400> 38  
ctgctggaga ggttattcct cg 22  
<210> 39  
<211> 24  
<212> DNA  
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<223> Description of Artificial Sequence: artificially synthesized primer sequence  
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gccaaacacca acctgtccaa .gttc 24  
<210> 40  
<211> 24  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: artificially synthesized primer sequence  
<400> 40  
tgcaaaggct ccaggtctga gggc 24  
<210> 41  
<211> 19  
<212> DNA  
<213> Artificial Sequence  
<220>  
<223> Description of Artificial Sequence: artificially synthesized primer sequence  
<400> 41  
ctctctctcc tcaggacaa 19  
<210> 42  
<211> 22  
<212> DNA  
<213> Artificial Sequence  
<220>

<223> Description of Artificial Sequence: artificially synthesized primer sequence  
<400> 42  
tggagcaaaa cagaatggct gg 22  
<210> 43  
<211> 24  
<212> DNA  
<213> Artificial Sequence  
<220>  
<223> Description of Artificial Sequence: artificially synthesized primer sequence  
<400> 43  
ctgagatgtc tctctcttc tttag 24  
<210> 44  
<211> 20  
<212> DNA  
<213> Artificial Sequence  
<220>  
<223> Description of Artificial Sequence: artificially synthesized primer sequence  
<400> 44  
acaatgactg atgagagatg 20  
<210> 45  
<211> 18  
<212> DNA  
<213> Artificial Sequence  
<220>  
<223> Description of Artificial Sequence: artificially synthesized primer sequence  
<400> 45  
cagacctgaa ggagacct 18  
<210> 46  
<211> 18  
<212> DNA  
<213> Artificial Sequence  
<220>

<223> Description of Artificial Sequence: artificially synthesized primer sequence  
<400> 46  
gtcagcgtaa acagttgc 18  
<210> 47  
<211> 20  
<212> DNA  
<213> Artificial Sequence  
<220>  
<223> Description of Artificial Sequence: artificially synthesized primer sequence  
<400> 47  
gccaagaagg ggatagaagg 20  
<210> 48  
<211> 20  
<212> DNA  
<213> Artificial Sequence  
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<223> Description of Artificial Sequence: artificially synthesized primer sequence  
<400> 48  
cttggttca gggctcagtc 20  
<210> 49  
<211> 20  
<212> DNA  
<213> Artificial Sequence  
<220>  
<223> Description of Artificial Sequence: artificially synthesized primer sequence  
<400> 49  
cagtggagct ggacaaagcc 20  
<210> 50  
<211> 20  
<212> DNA  
<213> Artificial Sequence  
<220>

<223> Description of Artificial Sequence: artificially synthesized primer sequence  
<400> 50  
tagcgacggt tctggAACCA 20  
<210> 51  
<211> 20  
<212> DNA  
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<400> 51  
ctgtcatctc actatGGGCA 20  
<210> 52  
<211> 20  
<212> DNA  
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<223> Description of Artificial Sequence: artificially synthesized primer sequence  
<400> 52  
ccaagtccga gcAGGAATT 20  
<210> 53  
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<212> DNA  
<213> Artificial Sequence  
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<400> 53  
aagacgtcaa gCCCTTGTG 20  
<210> 54  
<211> 20  
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<213> Artificial Sequence  
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<223> Description of Artificial Sequence: artificially synthesized primer sequence  
<400> 54  
aaaggagcac actttgggtgg 20  
<210> 55  
<211> 20  
<212> DNA  
<213> Artificial Sequence  
<220>  
<223> Description of Artificial Sequence: artificially synthesized primer sequence  
<400> 55  
agaagaata cgatgccatc 20  
<210> 56  
<211> 20  
<212> DNA  
<213> Artificial Sequence  
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<223> Description of Artificial Sequence: artificially synthesized primer sequence  
<400> 56  
gaaggggtgg tggtaggttc 20  
<210> 57  
<211> 20  
<212> DNA  
<213> Artificial Sequence  
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<400> 57  
tggaaatggc tatgtcagtg 20  
<210> 58  
<211> 20  
<212> DNA  
<213> Artificial Sequence  
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<223> Description of Artificial Sequence: artificially synthesized primer sequence  
 <400> 58  
 ctggtaatct gtgtttagg 20  
 <210> 59  
 <211> 20  
 <212> DNA  
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 <400> 59  
 caagggcctc tccaaacttg 20  
 <210> 60  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
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 <400> 60  
 gccccagaga cagcattcca 20  
 <210> 61  
 <211> 268  
 <212> PRT  
 <213> Homo sapiens  
 <400> 61  
 Met Ala Gln Pro Leu Cys Pro Pro Leu Ser Glu Ser Trp Met Leu Ser  
 1 5 10 15  
 Ala Ala Trp Gly Pro Thr Arg Arg Pro Pro Pro Ser Asp Lys Asp Cys  
 20 25 30  
 Gly Arg Ser Leu Val Ser Ser Pro Asp Ser Trp Gly Ser Thr Pro Ala  
 35 40 45

Asp Ser Pro Val Ala Ser Pro Ala Arg Pro Gly Thr Leu Arg Asp Pro  
50 55 60

Arg Ala Pro Ser Val Gly Arg Arg Gly Ala Arg Ser Ser Arg Leu Gly  
65 70 75 80

Ser Gly Gln Arg Gln Ser Ala Ser Glu Arg Glu Lys Leu Arg Met Arg  
85 90 95

Thr Leu Ala Arg Ala Leu His Glu Leu Arg Arg Phe Leu Pro Pro Ser  
100 105 110

Val Ala Pro Ala Gly Gln Ser Leu Thr Lys Ile Glu Thr Leu Arg Leu  
115 120 125

Ala Ile Arg Tyr Ile Gly His Leu Ser Ala Val Leu Gly Leu Ser Glu  
130 135 140

Glu Ser Leu Gln Arg Arg Cys Arg Gln Arg Gly Asp Ala Gly Ser Pro  
145 150 155 160

Arg Gly Cys Pro Leu Cys Pro Asp Asp Cys Pro Ala Gln Met Gln Thr  
165 170 175

Arg Thr Gln Ala Glu Gly Gln Gly Arg Gly Leu Gly Leu Val  
180 185 190

Ser Ala Val Arg Ala Gly Ala Ser Trp Gly Ser Pro Pro Ala Cys Pro  
195 200 205

Gly Ala Arg Ala Ala Pro Glu Pro Arg Asp Pro Pro Ala Leu Phe Ala  
210 215 220

Glu Ala Ala Cys Pro Glu Gly Gln Ala Met Glu Pro Ser Pro Pro Ser  
225 230 235 240

Pro Leu Leu Pro Gly Asp Val Leu Ala Leu Leu Glu Thr Trp Met Pro  
245 250 255

Leu Ser Pro Leu Glu Trp Leu Pro Glu Glu Pro Lys  
260 265

<210> 62

<211> 804

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<223> (1)..(807)

<400> 62

atg gcc cag ccc ctg tgc ccg ctc tcc gag tcc tgg atg ctc tct 48  
Met Ala Gln Pro Leu Cys Pro Pro Leu Ser Glu Ser Trp Met Leu Ser  
1 5 10 15

gcg gcc tgg ggc cca act cgg cgg ccg ccc tcc gac aag gac tgc 96  
Ala Ala Trp Gly Pro Thr Arg Arg Pro Pro Pro Ser Asp Lys Asp Cys  
20 25 30

ggc cgc tcc ctc gtc tcg tcc cca gac tca tgg ggc agc acc cca gcc 144  
Gly Arg Ser Leu Val Ser Ser Pro Asp Ser Trp Gly Ser Thr Pro Ala  
35 40 45

gac agc ccc gtg gcg agc ccc gcg cgg cca ggc acc ctc cgg gac ccc 192  
Asp Ser Pro Val Ala Ser Pro Ala Arg Pro Gly Thr Leu Arg Asp Pro  
50 55 60

cgc gcc ccc tcc gta ggt agg cgc ggc gcg cgc agc agc cgc ctg ggc 240  
Arg Ala Pro Ser Val Gly Arg Arg Gly Ala Arg Ser Ser Arg Leu Gly  
65 70 75 80

agc ggg cag agg cag agc gcc agt gag cgg gag aaa ctg cgc atg cgc 288  
Ser Gly Gln Arg Gln Ser Ala Ser Glu Arg Glu Lys Leu Arg Met Arg  
85 90 95

acg ctg gcc cgc gcc ctg cac gag ctg cgc cgc ttt cta ccg ccg tcc			336
Thr Leu Ala Arg Ala Leu His Glu Leu Arg Arg Phe Leu Pro Pro Ser			
100	105	110	
gtg gcg ccc gcg ggc cag agc ctg acc aag atc gag acg ctg cgc ctg			384
Val Ala Pro Ala Gly Gln Ser Leu Thr Lys Ile Glu Thr Leu Arg Leu			
115	120	125	
gct atc cgc tat atc ggc cac ctg tcg gcc gtg cta ggc ctc agc gag			432
Ala Ile Arg Tyr Ile Gly His Leu Ser Ala Val Leu Gly Leu Ser Glu			
130	135	140	
gag agt ctc cag cgc cgg tgc cgg cag cgc ggt gac gcg ggg tcc cct			480
Glu Ser Leu Gln Arg Arg Cys Arg Gln Arg Gly Asp Ala Gly Ser Pro			
145	150	155	160
cgg ggc tgc ccg ctg tgc ccc gac gac tgc ccc gcg cag atg cag aca			528
Arg Gly Cys Pro Leu Cys Pro Asp Asp Cys Pro Ala Gln Met Gln Thr			
165	170	175	
cgg acg cag gct gag ggg cag ggg cag ggg cgc ggg ctg ggc ctg gta			576
Arg Thr Gln Ala Glu Gly Gln Gly Gln Gly Arg Gly Leu Gly Leu Val			
180	185	190	
tcc gcc gtc cgc gcc ggg gcg tcc tgg gga tcc ccg cct gcc tgc ccc			624
Ser Ala Val Arg Ala Gly Ala Ser Trp Gly Ser Pro Pro Ala Cys Pro			
195	200	205	
gga gcc cga gct gca ccc gag ccg cgc gac ccg cct gcg ctg ttc gcc			672
Gly Ala Arg Ala Ala Pro Glu Pro Arg Asp Pro Pro Ala Leu Phe Ala			
210	215	220	
gag gcg gcg tgc cct gaa ggg cag gcg atg gag cca agc cca ccg tcc			720
Glu Ala Ala Cys Pro Glu Gly Gln Ala Met Glu Pro Ser Pro Pro Ser			
225	230	235	240

ccg ctc ctt ccg ggc gac gtg ctg gct ctg ttg gag acc tgg atg ccc 768  
Pro Leu Leu Pro Gly Asp Val Leu Ala Leu Leu Glu Thr Trp Met Pro  
245 250 255

ctc tcg cct ctg gag tgg ctg cct gag gag ccc aag 804  
Leu Ser Pro Leu Glu Trp Leu Pro Glu Glu Pro Lys.  
260 265

<210> 63  
<211> 215  
<212> PRT  
<213> Homo sapiens  
<400> 63

Met Gly Ser Pro Arg Ser Ala Leu Ser Cys Leu Leu Leu His Leu Leu  
1 5 10 15

Val Leu Cys Leu Gln Ala Gln Val Thr Val Gln Ser Ser Pro Asn Phe  
20 25 30

Thr Gln His Val Arg Glu Gln Ser Leu Val Thr Asp Gln Leu Ser Arg  
35 40 45

Arg Leu Ile Arg Thr Tyr Gln Leu Tyr Ser Arg Thr Ser Gly Lys His  
50 55 60

Val Gln Val Leu Ala Asn Lys Arg Ile Asn Ala Met Ala Glu Asp Gly  
65 70 75 80

Asp Pro Phe Ala Lys Leu Ile Val Glu Thr Asp Thr Phe Gly Ser Arg  
85 90 95

Val Arg Val Arg Gly Ala Glu Thr Gly Leu Tyr Ile Cys Met Asn Lys  
100 105 110

Lys Gly Lys Leu Ile Ala Lys Ser Asn Gly Lys Gly Lys Asp Cys Val  
115 120 125

Phe Thr Glu Ile Val Leu Glu Asn Asn Tyr Thr Ala Leu Gln Asn Ala  
130                    135                    140

Lys Tyr Glu Gly Trp Tyr Met Ala Phe Thr Arg Lys Gly Arg Pro Arg  
145                    150                    155                    160

Lys Gly Ser Lys Thr Arg Gln His Gln Arg Glu Val His Phe Met Lys  
165                    170                    175

Arg Leu Pro Arg Gly His His Thr Thr Glu Gln Ser Leu Arg Phe Glu  
180                    185                    190

Phe Leu Asn Tyr Pro Pro Phe Thr Arg Ser Leu Arg Gly Ser Gln Arg  
195                    200                    205

Thr Trp Ala Pro Glu Pro Arg  
210

<210> 64

<211> 645

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<223> (1)..(648)

<400> 64

atg ggc agc ccc cgc tcc gcg ctg agc tgc ctg ctg ttg cac ttg ctg      48  
Met Gly Ser Pro Arg Ser Ala Leu Ser Cys Leu Leu Leu His Leu Leu  
1                    5                    10                    15

gtc ctc tgc ctc caa gcc cag gta act gtt cag tcc tca cct aat ttt      96  
Val Leu Cys Leu Gln Ala Gln Val Thr Val Gln Ser Ser Pro Asn Phe  
20                    25                    30

aca cag cat gtg agg gag cag agc ctg gtg acg gat cag ctc agc cgc      144

Thr Gln His Val Arg Glu Gln Ser Leu Val Thr Asp Gln Leu Ser Arg			
35	40	45	
cgc ctc atc cgg acc tac caa ctc tac agc cgc acc agc ggg aag cac			192
Arg Leu Ile Arg Thr Tyr Gln Leu Tyr Ser Arg Thr Ser Gly Lys His			
50	55	60	
gtg cag gtc ctg gcc aac aag cgc atc aac gcc atg gca gag gac ggc			240
Val Gln Val Leu Ala Asn Lys Arg Ile Asn Ala Met Ala Glu Asp Gly			
65	70	75	80
gac ccc ttc gca aag ctc atc gtg gag acg gac acc ttt gga agc aga			288
Asp Pro Phe Ala Lys Leu Ile Val Glu Thr Asp Thr Phe Gly Ser Arg			
85	90	95	
gtt cga gtc cga gga gcc gag acg ggc ctc tac atc tgc atg aac aag			336
Val Arg Val Arg Gly Ala Glu Thr Gly Leu Tyr Ile Cys Met Asn Lys			
100	105	110	
aag ggg aag ctg atc gcc aag agc aac ggc aaa ggc aag gac tgc gtc			384
Lys Gly Lys Leu Ile Ala Lys Ser Asn Gly Lys Gly Lys Asp Cys Val			
115	120	125	
ttc acg gag att gtg ctg gag aac aac tac aca gcg ctg cag aat gcc			432
Phe Thr Glu Ile Val Leu Glu Asn Asn Tyr Thr Ala Leu Gln Asn Ala			
130	135	140	
aag tac gag ggc tgg tac atg gcc ttc acc cgc aag ggc cgg ccc cgc			480
Lys Tyr Glu Gly Trp Tyr Met Ala Phe Thr Arg Lys Gly Arg Pro Arg			
145	150	155	160
aag ggc tcc aag acg cgg cag cac cag cgt gag gtc cac ttc atg aag			528
Lys Gly Ser Lys Thr Arg Gln His Gln Arg Glu Val His Phe Met Lys			
165	170	175	
cgg ctg ccc cgg ggc cac cac acc acc gag cag agc ctg cgc ttc gag			576

Arg Leu Pro Arg Gly His His Thr Thr Glu Gln Ser Leu Arg Phe Glu  
180 185 190

ttc ctc aac tac ccg ccc ttc acg cgc agc ctg cgc ggc agc cag agg 624  
Phe Leu Asn Tyr Pro Pro Phe Thr Arg Ser Leu Arg Gly Ser Gln Arg  
195 200 205

act tgg gcc ccg gaa ccc cga 645  
Thr Trp Ala Pro Glu Pro Arg  
210 215  
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<211> 212  
<212> PRT  
<213> Homo sapiens  
<400> 65

Met Asp Tyr Leu Leu Met Ile Phe Ser Leu Leu Phe Val Ala Cys Gln  
1 5 10 15

Gly Ala Pro Glu Thr Ala Val Leu Gly Ala Glu Leu Ser Ala Val Gly  
20 25 30

Glu Asn Gly Gly Glu Lys Pro Thr Pro Ser Pro Pro Trp Arg Leu Arg  
35 40 45

Arg Ser Lys Arg Cys Ser Cys Ser Ser Leu Met Asp Lys Glu Cys Val  
50 55 60

Tyr Phe Cys His Leu Asp Ile Ile Trp Val Asn Thr Pro Glu His Val  
65 70 75 80

Val Pro Tyr Gly Leu Gly Ser Pro Arg Ser Lys Arg Ala Leu Glu Asn  
85 90 95

Leu Leu Pro Thr Lys Ala Thr Asp Arg Glu Asn Arg Cys Gln Cys Ala  
100 105 110

Ser Gln Lys Asp Lys Lys Cys Trp Asn Phe Cys Gln Ala Gly Lys Glu  
115                    120                    125

Leu Arg Ala Glu Asp Ile Met Glu Lys Asp Trp Asn Asn His Lys Lys  
130                    135                    140

Gly Lys Asp Cys Ser Lys Leu Gly Lys Lys Cys Ile Tyr Gln Gln Leu  
145                    150                    155                    160

Val Arg Gly Arg Lys Ile Arg Arg Ser Ser Glu Glu His Leu Arg Gln  
165                    170                    175

Thr Arg Ser Glu Thr Met Arg Asn Ser Val Lys Ser Ser Phe His Asp  
180                    185                    190

Pro Lys Leu Lys Gly Lys Pro Ser Arg Glu Arg Tyr Val Thr His Asn  
195                    200                    205

Arg Ala His Trp

210

<210> 66

<211> 636

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<223> (1)..(639)

<400> 66

atg gat tat ttg ctc atg att ttc tct ctg ctg ttt gtg gct tgc caa 48  
Met Asp Tyr Leu Leu Met Ile Phe Ser Leu Leu Phe Val Ala Cys Gln  
1                    5                    10                    15

gga gct cca gaa aca gca gtc tta ggc gct gag ctc agc gcg gtg ggt 96  
Gly Ala Pro Glu Thr Ala Val Leu Gly Ala Glu Leu Ser Ala Val Gly  
20                    25                    30

gag aac ggc ggg gag aaa ccc act ccc agt cca ccc tgg cgg ctc cgc	35	40	45	144
Glu Asn Gly Gly Glu Lys Pro Thr Pro Ser Pro Pro Trp Arg Leu Arg				
cgg tcc aag cgc tgc tcc tgc tcg tcc ctg atg gat aaa gag tgt gtc	50	55	60	192
Arg Ser Lys Arg Cys Ser Cys Ser Leu Met Asp Lys Glu Cys Val				
tac ttc tgc cac ctg gac atc att tgg gtc aac act ccc gag cac gtt	65	70	75	240
Tyr Phe Cys His Leu Asp Ile Ile Trp Val Asn Thr Pro Glu His Val				
gtt ccg tat gga ctt gga agc cct agg tcc aag aga gcc ttg gag aat	85	90	95	288
Val Pro Tyr Gly Leu Gly Ser Pro Arg Ser Lys Arg Ala Leu Glu Asn				
tta ctt ccc aca aag gca aca gac cgt gag aat aga tgc caa tgt gct	100	105	110	336
Leu Leu Pro Thr Lys Ala Thr Asp Arg Glu Asn Arg Cys Gln Cys Ala				
agc caa aaa gac aag aag tgc tgg aat ttt tgc caa gca gga aaa gaa	115	120	125	384
Ser Gln Lys Asp Lys Lys Cys Trp Asn Phe Cys Gln Ala Gly Lys Glu				
ctc agg gct gaa gac att atg gag aaa gac tgg aat aat cat aag aaa	130	135	140	432
Leu Arg Ala Glu Asp Ile Met Glu Lys Asp Trp Asn Asn His Lys Lys				
gga aaa gac tgt tcc aag ctt ggg aaa aag tgt att tat cag cag tta	145	150	155	480
Gly Lys Asp Cys Ser Lys Leu Gly Lys Lys Cys Ile Tyr Gln Gln Leu				
gtg aga gga aga aaa atc aga aga agt tca gag gaa cac cta aga caa	165	170	175	528
Val Arg Gly Arg Lys Ile Arg Arg Ser Ser Glu Glu His Leu Arg Gln				

acc agg tcg gag acc atg aga aac agc gtc aaa tca tct ttt cat gat 576  
Thr Arg Ser Glu Thr Met Arg Asn Ser Val Lys Ser Ser Phe His Asp  
180 185 190

ccc aag ctg aaa ggc aag ccc tcc aga gag cgt tat gtg acc cac aac 624  
Pro Lys Leu Lys Gly Lys Pro Ser Arg Glu Arg Tyr Val Thr His Asn  
195 200 205

cga gca cat tgg 636  
Arg Ala His Trp  
210  
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<400> 67  
Met Gln His Arg Gly Phe Leu Leu Leu Thr Leu Leu Ala Leu Leu Ala  
1 5 10 15

Leu Thr Ser Ala Val Ala Lys Lys Lys Asp Lys Val Lys Lys Gly Gly  
20 25 30

Pro Gly Ser Glu Cys Ala Glu Trp Ala Trp Gly Pro Cys Thr Pro Ser  
35 40 45

Ser Lys Asp Cys Gly Val Gly Phe Arg Glu Gly Thr Cys Gly Ala Gln  
50 55 60

Thr Gln Arg Ile Arg Cys Arg Val Pro Cys Asn Trp Lys Lys Glu Phe  
65 70 75 80

Gly Ala Asp Cys Lys Tyr Lys Phe Glu Asn Trp Gly Ala Cys Asp Gly  
85 90 95

Gly Thr Gly Thr Lys Val Arg Gln Gly Thr Leu Lys Lys Ala Arg Tyr  
100 105 110

Asn Ala Gln Cys Gln Glu Thr Ile Arg Val Thr Lys Pro Cys Thr Pro  
115 120 125

Lys Thr Lys Ala Lys Ala Lys Lys Gly Lys Gly Lys Asp  
130 135 140

<210> 68

<211> 429

<212> DNA

<213> Homo sapiens

<220>

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<223> (1)..(432)

<400> 68

atg cag cac cga ggc ttc ctc ctc acc ctc ctc gcc ctg ctg gcg 48  
Met Gln His Arg Gly Phe Leu Leu Leu Thr Leu Leu Ala Leu Leu Ala  
1 5 10 15

ctc acc tcc gcg gtc gcc aaa aag aaa gat aag gtg aag aag ggc ggc 96  
Leu Thr Ser Ala Val Ala Lys Lys Asp Lys Val Lys Gly Gly  
20 25 30

ccg ggg agc gag tgc gct gag tgg gcc tgg ggg ccc tgc acc ccc agc 144  
Pro Gly Ser Glu Cys Ala Glu Trp Ala Trp Gly Pro Cys Thr Pro Ser  
35 40 45

agc aag gat tgc ggc gtg ggt ttc cgc gag ggc acc tgc ggg gcc cag 192  
Ser Lys Asp Cys Gly Val Gly Phe Arg Glu Gly Thr Cys Gly Ala Gln  
50 55 60

acc cag cgc atc cgg tgc agg gtg ccc tgc aac tgg aag aag gag ttt 240  
Thr Gln Arg Ile Arg Cys Arg Val Pro Cys Asn Trp Lys Lys Glu Phe  
65 70 75 80

gga gcc gac tgc aag tac aag ttt gag aac tgg ggt gcg tgt gat ggg 288  
Gly Ala Asp Cys Lys Tyr Lys Phe Glu Asn Trp Gly Ala Cys Asp Gly

85	90	95	
ggc aca ggc acc aaa gtc cgc caa ggc acc ctg aag aag gcg cgc tac    336			
Gly Thr Gly Thr Lys Val Arg Gln Gly Thr Leu Lys Lys Ala Arg Tyr			
100	105	110	
aat gct cag tgc cag gag acc atc cgc gtc acc aag ccc tgc acc ccc    384			
Asn Ala Gln Cys Gln Glu Thr Ile Arg Val Thr Lys Pro Cys Thr Pro			
115	120	125	
aag acc aaa gca aag gcc aaa gcc aag aaa ggg aag gga aag gac    429			
Lys Thr Lys Ala Lys Ala Lys Lys Gly Lys Gly Lys Asp			
130	135	140	
<210> 69			
<211> 408			
<212> PRT			
<213> Homo sapiens			
<400> 69			
Met Ile Pro Gly Asn Arg Met Leu Met Val Val Leu Leu Cys Gln Val			
1	5	10	15
Leu Leu Gly Gly Ala Ser His Ala Ser Leu Ile Pro Glu Thr Gly Lys			
20	25	30	
Lys Lys Val Ala Glu Ile Gln Gly His Ala Gly Gly Arg Arg Ser Gly			
35	40	45	
Gln Ser His Glu Leu Leu Arg Asp Phe Glu Ala Thr Leu Leu Gln Met			
50	55	60	
Phe Gly Leu Arg Arg Arg Pro Gln Pro Ser Lys Ser Ala Val Ile Pro			
65	70	75	80
Asp Tyr Met Arg Asp Leu Tyr Arg Leu Gln Ser Gly Glu Glu Glu			
85	90	95	

Glu Gln Ile His Ser Thr Gly Leu Glu Tyr Pro Glu Arg Pro Ala Ser  
100 105 110

Arg Ala Asn Thr Val Arg Ser Phe His His Glu Glu His Leu Glu Asn  
115 120 125

Ile Pro Gly Thr Ser Glu Asn Ser Ala Phe Arg Phe Leu Phe Asn Leu  
130 135 140

Ser Ser Ile Pro Glu Asn Glu Ala Ile Ser Ser Ala Glu Leu Arg Leu  
145 150 155 160

Phe Arg Glu Gln Val Asp Gln Gly Pro Asp Trp Glu Arg Gly Phe His  
165 170 175

Arg Ile Asn Ile Tyr Glu Val Met Lys Pro Pro Ala Glu Val Val Pro  
180 185 190

Gly His Leu Ile Thr Arg Leu Leu Asp Thr Arg Leu Val His His Asn  
195 200 205

Val Thr Arg Trp Glu Thr Phe Asp Val Ser Pro Ala Val Leu Arg Trp  
210 215 220

Thr Arg Glu Lys Gln Pro Asn Tyr Gly Leu Ala Ile Glu Val Thr His  
225 230 235 240

Leu His Gln Thr Arg Thr His Gln Gly Gln His Val Arg Ile Ser Arg  
245 250 255

Ser Leu Pro Gln Gly Ser Gly Asn Trp Ala Gln Leu Arg Pro Leu Leu  
260 265 270

Val Thr Phe Gly His Asp Gly Arg Gly His Ala Leu Thr Arg Arg Arg  
275 280 285

Arg Ala Lys Arg Ser Pro Lys His His Ser Gln Arg Ala Arg Lys Lys  
290 295 300

Asn Lys Asn Cys Arg Arg His Ser Leu Tyr Val Asp Phe Ser Asp Val  
305 310 315 320

Gly Trp Asn Asp Trp Ile Val Ala Pro Pro Gly Tyr Gln Ala Phe Tyr  
325 330 335

Cys His Gly Asp Cys Pro Phe Pro Leu Ala Asp His Leu Asn Ser Thr  
340 345 350

Asn His Ala Ile Val Gln Thr Leu Val Asn Ser Val Asn Ser Ser Ile  
355 360 365

Pro Lys Ala Cys Cys Val Pro Thr Glu Leu Ser Ala Ile Ser Met Leu  
370 375 380

Tyr Leu Asp Glu Tyr Asp Lys Val Val Leu Lys Asn Tyr Gln Glu Met  
385 390 395 400

Val Val Glu Gly Cys Gly Cys Arg  
405

<210> 70

<211> 1224

<212> DNA

<213> Homo sapiens

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<223> (1)..(1227)

<400> 70

atg att cct ggt aac cga atg ctg atg gtc gtt tta tta tgc caa gtc 48  
Met Ile Pro Gly Asn Arg Met Leu Met Val Val Leu Leu Cys Gln Val  
1 5 10 15

ctg cta gga ggc gcg agc cat gct agt ttg ata cct gag acg ggg aag 96

Leu	Leu	Gly	Gly	Ala	Ser	His	Ala	Ser	Leu	Ile	Pro	Glu	Thr	Gly	Lys				
20															30				
aaa	aaa	gtc	gcc	gag	att	cag	ggc	cac	gct	gga	gga	cgc	cgc	tca	ggg	144			
Lys	Lys	Val	Ala	Glu	Ile	Gln	Gly	His	Ala	Gly	Gly	Arg	Arg	Ser	Gly				
35															45				
cag	agc	cat	gag	ctc	ctg	cgg	gac	ttc	gag	gct	aca	ctt	ctg	cag	atg	192			
Gln	Ser	His	Glu	Leu	Leu	Arg	Asp	Phe	Glu	Ala	Thr	Leu	Leu	Gln	Met				
50															60				
ttt	ggg	ctg	cgc	cgc	cgc	ccg	cag	cct	agc	aag	agt	gcc	gtc	att	ccg	240			
Phe	Gly	Leu	Arg	Arg	Arg	Pro	Gln	Pro	Ser	Lys	Ser	Ala	Val	Ile	Pro				
65															80				
gac	tac	atg	cgg	gat	ctt	tac	cg	ctt	cag	tct	ggg	gag	gag	gag	gaa	288			
Asp	Tyr	Met	Arg	Asp	Leu	Tyr	Arg	Leu	Gln	Ser	Gly	Glu	Glu	Glu	Glu				
85															95				
gag	cag	atc	cac	agc	act	ggt	ctt	gag	tat	cct	gag	cgc	ccg	gcc	agc	336			
Glu	Gln	Ile	His	Ser	Thr	Gly	Leu	Glu	Tyr	Pro	Glu	Arg	Pro	Ala	Ser				
100															110				
cg	gg	cc	aa	cc	gt	gg	ag	gc	tt	c	ca	ca	aa	ca	tt	384			
Arg	Ala	Asn	Thr	Val	Arg	Ser	Phe	His	His	Glu	Glu	His	Leu	Glu	Asn				
115															125				
atc	cca	ggg	acc	agt	gaa	aac	tct	gct	ttt	cgt	ttc	ctc	ttt	aac	ctc	432			
Ile	Pro	Gly	Thr	Ser	Glu	Asn	Ser	Ala	Phe	Arg	Phe	Leu	Phe	Asn	Leu				
130															140				
agc	agc	atc	cct	gag	aac	gag	gct	atc	tcc	tct	gca	gag	ctt	cgg	ctc	480			
Ser	Ser	Ile	Pro	Glu	Asn	Glu	Ala	Ile	Ser	Ser	Ala	Glu	Leu	Arg	Leu				
145															160				
ttc	cgg	gag	cag	gt	g	ac	cag	gg	c	c	ttt	gat	tgg	gaa	agg	gg	ttc	cac	528

Phe Arg Glu Gln Val Asp Gln Gly Pro Asp Trp Glu Arg Gly Phe His			
165	170	175	
cgt ata aac att tat gag gtt atg aag ccc cca gca gaa gtg gtg cct			576
Arg Ile Asn Ile Tyr Glu Val Met Lys Pro Pro Ala Glu Val Val Pro			
180	185	190	
ggg cac ctc atc aca cga cta ctg gac acg aga ctg gtc cac cac aat			624
Gly His Leu Ile Thr Arg Leu Leu Asp Thr Arg Leu Val His His Asn			
195	200	205	
gtg aca cgg tgg gaa act ttt gat gtg agc cct gcg gtc ctt cgc tgg			672
Val Thr Arg Trp Glu Thr Phe Asp Val Ser Pro Ala Val Leu Arg Trp			
210	215	220	
acc cgg gag aag cag cca aac tat ggg cta gcc att gag gtg act cac			720
Thr Arg Glu Lys Gln Pro Asn Tyr Gly Leu Ala Ile Glu Val Thr His			
225	230	235	240
ctc cat cag act cgg acc cac cag ggc cag cat gtc agg att agc cga			768
Leu His Gln Thr Arg Thr His Gln Gly Gln His Val Arg Ile Ser Arg			
245	250	255	
tcg tta cct caa ggg agt ggg aat tgg gcc cag ctc cgg ccc ctc ctg			816
Ser Leu Pro Gln Gly Ser Gly Asn Trp Ala Gln Leu Arg Pro Leu Leu			
260	265	270	
gtc acc ttt ggc cat gat ggc cgg ggc cat gcc ttg acc cga cgc cgg			864
Val Thr Phe Gly His Asp Gly Arg Gly His Ala Leu Thr Arg Arg Arg			
275	280	285	
agg gcc aag cgt agc cct aag cat cac tca cag cgg gcc agg aag aag			912
Arg Ala Lys Arg Ser Pro Lys His His Ser Gln Arg Ala Arg Lys Lys			
290	295	300	
aat aag aac tgc cgg cgc cac tcg ctc tat gtg gac ttc agc gat gtg			960

Asn Lys Asn Cys Arg Arg His Ser Leu Tyr Val Asp Phe Ser Asp Val				
305	310	315	320	
ggc tgg aat gac tgg att gtg gcc cca cca ggc tac cag gcc ttc tac				1008
Gly Trp Asn Asp Trp Ile Val Ala Pro Pro Gly Tyr Gln Ala Phe Tyr				
325	330	335		
tgc cat ggg gac tgc ccc ttt cca ctg gct gac cac ctc aac tca acc				1056
Cys His Gly Asp Cys Pro Phe Pro Leu Ala Asp His Leu Asn Ser Thr				
340	345	350		
aac cat gcc att gtg cag acc ctg gtc aat tct gtc aat tcc agt atc				1104
Asn His Ala Ile Val Gln Thr Leu Val Asn Ser Val Asn Ser Ser Ile				
355	360	365		
ccc aaa gcc tgt tgt gtg ccc act gaa ctg agt gcc atc tcc atg ctg				1152
Pro Lys Ala Cys Cys Val Pro Thr Glu Leu Ser Ala Ile Ser Met Leu				
370	375	380		
tac ctg gat gag tat gat aag gtg gta ctg aaa aat tat cag gag atg				1200
Tyr Leu Asp Glu Tyr Asp Lys Val Val Leu Lys Asn Tyr Gln Glu Met				
385	390	395	400	
gta gta gag gga tgt ggg tgc cgc				1224
Val Val Glu Gly Cys Gly Cys Arg				
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tgccctacggt ggtgcgccct ctgc 24

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gaagcgcaac agggccatca cg 22

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ccacgtcacg caggtcccg t c 22

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gatcctgttc tctgcctctg ga 22

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tcatccactt tgtccacccg ag 22

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ttcctcgctc tggcctttg g 21

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gctggatctt cgtaggctcc g 21

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ggcaagctga ccctgaagt 19

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gggtgctcag gtagtggtt 19